



**BRITISH MODEL FLYING ASSOCIATION**  
**CONTEST RULES**  
**SECTION 7**  
**RADIO CONTROLLED SILENT FLIGHT**  
**GLIDERS & ELECTROFLIGHT**

To be read in conjunction with the General Rules, Sections 1 and 2, which are available  
free of charge from the BMFA

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# CONTEST RULES - SECTION 7

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### Note:

1. FAI class rules for F3B, F3F, F3H, F3J, F3K, F3Q, F5A, F5B, F5F, F5E, F5H, F5G, F5J, F5D and F5K are in the FAI Sporting Code which can be downloaded from [www.fai.org/fai-documents#](http://www.fai.org/fai-documents#) or [www.fai.org/ciam-documents](http://www.fai.org/ciam-documents). These rule books are also available direct from BMFA Head Office.
2. Due to the previous somewhat haphazard numbering of this rule book it has now been numbered in a more logical fashion and at the same time provision has been made for new sections if necessary. The old numbers are shown bracketed in the contents list only. Number changes have NOT been side-barred throughout the book unless they are part of rule changes.

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## **Changes to the rule book.**

All changes to the rule book are marked with a side bar. This section has been marked as an example.

### **Gender**

Throughout this rule book the pronoun 'he' is used for conciseness. 'She' should be substituted when appropriate.

### **Synopsis of Changes**

Rules re-numbered

7.3.4 (7.9.2.2) - section replaced with additions

7.3.2.2 (7.9.2.1.2) - section replaced

7.3.2.4 (7.9.2.1.4) - Para (d) added

7.4.1 (5.6.7.1) - deleted

7.4.2 (7.9.1.1.1, .2, .3, .4 and .5) - minor changes.

7.4.2.6 (7.9.1.1.6) - final para of (a) deleted and new para (b) added.

(7.9.1.2) - Section deleted except para (7.9.1.1.7) which is added as 7.4.2.7

7.4.3.1 (7.9.1.2) - Revised method of determining league positions.

7.4.4.1 (7.9.1.3.1) - minor addition.

7.6.1.2 (7.9.3.1.2)(d) and (g) - minor changes.

7.6.1.3 (7.9.3.1.3)(d) - changes to entry definition.

7.6.1.5 (7.9.3.1.5)(e) - changes to number of league results to count.

7.20.1 (7.9.4.1) - Major changes throughout the section.

7.20.3 (7.9.4.3) - Section deleted.

Appendix 3 - Added height limiter switch.

### **Eligibility to enter BMFA competitions**

Following queries about the right of non-BMFA members to enter BMFA competitions, the following is a quote from the BMFA General Rules, Section 2, Rule 2.1.6 Entry to BMFA Contests:

Entry to Centralised, Free Flight Area Centralised and Team Trials contests, including all the National Championships, is open to all fliers. Restrictions on the number of entries may apply at a National Championship.

All BMFA members must produce on demand their current membership card as proof of insurance.

Non-members must produce evidence of valid insurance cover.

Foreign non-BMFA members must produce a valid FAI licence.

## **7.1 General Rules**

### **7.1.1 Definitions of a Radio Controlled Glider**

Aeromodel which is not provided with a propulsion device and in which lift is generated by aerodynamic forces acting on surfaces remaining fixed except for control purposes (i.e. not rotating or ornithopter type surfaces).

### **7.1.2 Definitions of an Electric Powered Glider**

Aeromodel, as in 7.1.1, but when propulsion is affected by fixed or foldable propeller(s) driven by an electric motor which may or may not be regulated during flight.

### **7.1.3 Radio Frequencies**

Radio frequencies on which R/C Gliders are flown should be EVEN NUMBERS in the 35 MHz BAND ONLY. Competitors should realise the need to be able to change frequencies in the case of a fly-off in certain competitions.

2.4 GHz radio equipment may also be used.

27 MHz band Radios are not recommended for other than MINI GLIDER contest work.

A full listing of radio frequencies available for model control is published in the BMFA Members Handbook, section 1.2.6.

## **7.2 General Rules For Silent Flight Contests**

### **7.2.1 Object**

To provide standards for the competitive flying of R/C Silent Flight models where these are not otherwise specified.

### **7.2.2 Safety**

It is the responsibility of the Contest Director (CD) to ensure the safety of contestants, assistants and any members of the public who may be present at an event.

It is the responsibility of all competitors to report to the CD any incident which causes injury, however minor, to any person. Competitors also have a responsibility to report situations which could potentially endanger the CD.

The CD must make a written report of the incident(s) to the Safety Representative of the Silent Flight Technical Committee stating what happened, the cause of the incident and giving an opinion of how a repetition could be avoided in future

### **7.2.3 Flying Site**

Competitions, other than slope events, must be held on sites having reasonably level terrain which will minimise the possibility of slope and wave soaring.

### **7.2.4 Number of Models**

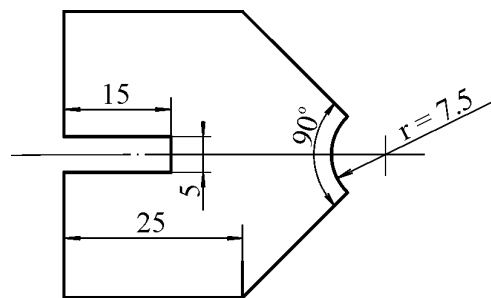
- (a) The competitor may use not more than two models or the combined parts thereof in any one competition unless otherwise allowed in the class rules.
- (b) The competitor shall not allow any other competitor to use these models or the parts thereof during the same competition.
- (c) The competitor shall display on the wing of any model flown in a permanent manner in characters not less than 25 mm high his name or BMFA number.

### 7.2.5 Characteristics of Model Aircraft

- (a) Maximum Surface Area.....150 dm<sup>2</sup> (2325 in<sup>2</sup>)  
Maximum Flying Weight..... 5 Kilograms (11.023 lbs)  
Maximum Surface Loading .....75 g / dm<sup>2</sup> (24.51 oz / ft<sup>2</sup>)  
Minimum Surface Loading .....12 g / dm<sup>2</sup> (3.95 oz / ft<sup>2</sup>)
- (b) Any device for the transmission of information from the model to the pilot by means of radio equipment, other than receiver battery state or signal strength, is prohibited.
- (c) Nose of model shall have a radius of not less than 7.5 mm.
- (d) All ballast must be carried within the airframe.

**BE SURE TO CHECK INDIVIDUAL EVENTS FOR FURTHER RESTRICTIONS WHICH MAY APPLY**

**FAI TEMPLATE FOR  
NOSE RADIUS, TOWHOOK  
AND MARKING**



### 7.2.6 Radio

- (a) Radios in the 35 MHz band shall be able to operate simultaneously with other transmitters, preferably at 10 kHz but at least 20 kHz from the control transmitter.
- (b) Radios in the 27 MHz band are not recommended for other than MINI GLIDER contest work. However where they are used they shall be able to operate simultaneously with other transmitters, preferably 20 kHz but at least 50 kHz from the control transmitter.

### 7.2.7 Control of Transmitters not in the 2.4 GHz band

- (a) The organiser cannot begin the competition flights until all competitors have handed over all transmitters to the organisers. Failure to hand in a transmitter before the official starting time of the contest will result in disqualification.
- (b) Any test transmission during the competition without the permission of the organisers is forbidden and entails disqualification.
- (c) The competitor must hand over his transmitter to the designated official immediately after finishing his flight.

### 7.2.8 Competitors and Helpers

- (a) The competitor (pilot) must operate his/her own radio equipment personally.
- (b) Each competitor is allowed a total of three helpers.

### 7.2.9 Competition Flights

See individual event rules for any specific rules on competition flights, otherwise the following applies.

- (a) The competitor will be allowed at least TWO (preferably more) official flights.
- (b) The competitor will be allowed TWO attempts at each official flight.
- (c) There is an official attempt at a flight when the model has left the hands of the competitor or his/her helper under the pull of the launching apparatus.
- (d) If, for any reason, the official flight is timed at less than 60 seconds in duration, the competitor will be allowed a second attempt which must be made immediately and within the allocated time slot.
- (e) A complete slot must be re-flown if any flight(s) was not judged by fault of the organisers or time-keepers.
- (f) All flights must be timed by at least TWO stopwatches, one of which must have a digital display. In the event of both watches failing the flight will count as zero.

#### **7.2.10 Cancellation and Disqualification**

- (a) The flight is cancelled and recorded as a zero score if the competitor used a model not conforming to any items of rule 7.2.5. In the event of intentional or flagrant violation of the rules, in the judgement of the Contest Director, the competitor may be disqualified.
- (b) The flight is cancelled and recorded as a zero score if the model loses any part in flight.
- (c) The loss of any part of the model during landing (touchdown) will not be recorded.
- (d) The flight is cancelled and recorded as a zero score if the model is piloted by anyone other than the competitor.
- (e) The flight is cancelled and recorded as a zero score if some part of the model does not land within 75 metres of the centre of the designated landing circle/area (this does not apply to class F3B).

#### **7.2.11 Protests and Appeals**

- (a) Any competitor wishing to register a protest must do so at the event to the Contest Director.
- (b) If not satisfied with the CD's decision the competitor must, at the event, hand him the protest in writing, together with a fee of double the standard entry fee. The CD will then immediately empanel a jury of three persons to deal with the protest.
- (c) The jury's decision is final, subject to the right of the competitor to appeal to the BMFA Council.
- (d) Notification that an appeal is pending must be sent by the competitor to the BMFA Competition Secretary to arrive not later than two weeks from the date of the event.
- (e) The appeal itself, together with any supporting evidence, must be sent to the BMFA Competition Secretary to arrive not later than two months from the date of the event.
- (f) If the written protest or the appeal is upheld, the protest fee will be returned.

## **7.3.1 UK Variations on F3B for use in the UK F3B LEAGUE**

(The bracketed numbers are the original F3B rule number).

### **F3B, Thermal Soaring Models, General Rules**

#### **7.3.1.1 (5.3.1.3) Characteristics of Radio Controlled Gliders**

(b) Third sentence to read:

Competitors may use more than three models at a contest. However the use of a fourth model may only be allowed if the first and second models are damaged beyond repair that is reasonable within the time available during the contest.

#### **7.3.1.2 (5.3.1.7) Cancellation of a Flight and Disqualification**

Replace Paragraph (c) with:

(c) If the model is controlled, at any time, by anyone other than the competitor the flight is annulled and a zero score is applied. No further attempts at that particular task in that round are allowed.

Note: This conforms with rule 7.2.10 Cancellations and Disqualifications, Paragraph (d).

#### **7.3.1.3 (5.3.1.8) Organisation of Starts**

Delete the first paragraph and replace with:

The competitors shall be combined in groups with a draw, in accordance with the radio frequencies used, to permit as many flights simultaneously as possible. The groups for the distance and duration tasks shall be arranged so that, as far as possible, competitors do not fly against each other more than once in each contest. However, for the A-League the groups for the distance task shall be chosen so that, as far as possible, at the end of the league year each competitor has flown against each other competitor an equal number of times.

Delete second paragraph and replace with:

The duration task must have a minimum of three pilots in a group. The distance task must have a minimum of two pilots in a group. The group for the speed task shall consist of all pilots.

Delete fifth paragraph and replace with:

Each competitor shall be given a contest flight schedule at the start of each contest. The contest shall be run in a continuous manner, in accordance with the schedule, as far as possible, without the announcement of preparation time. The start of each slot will be announced by the Contest Organiser (CO) at which time the names of the competitors shall also be announced for information purposes only. Only if the make-up of the slot is changed from that scheduled will the CO ask the competitors to confirm their readiness. If a competitor misses his slot through his own fault he shall not be entitled to a reflight. At the start of the contest, or if the contest is restarted following a break of longer than ten minutes, at least three minutes preparation time will be announced.

#### **7.3.1.4 (5.3.1.9) Organisation of Contests**

Delete first paragraph and replace with:

Transmitter control shall comply with the requirements of Section 4b of the Sporting Code, however, the following rules shall take precedence:

(a) Competitors shall control the operation of their own transmitters at all times.

- (b) Unless otherwise agreed with the CO, a transmitter may only be operated when the official frequency peg is fitted to the aerial. The only form of authorised transmission is when the emitted frequency corresponds with the frequency peg and the frequency shown on the flight schedule, or an alternative frequency subsequently advised by the CO.

Delete the second paragraph

### **F3B Multi Task Soaring**

#### **7.3.1.5**

##### **(5.3.2.1) Definition**

At the end of the paragraph commencing 'Any single round must . . .', add:

In the event of damage to a model during a round, a competitor may change to another model to complete any remaining tasks within that round.

The change of model should only be allowed if the model is damaged to such an extent that it could not be repaired to a sufficiently safe standard for it to continue in subsequent tasks in the contest.

The decision as to whether a model should be changed will be taken by the CD and at least one other competitor.

In the case of a pilot in the 'A' league, the CD and a pilot from the 'B' league will make the decision.

In the case of a pilot in the 'B' league, the CD and a pilot from the 'A' league will make the decision.

In the case of the CD, one pilot from each league will make the decision.

Only one change of model per contest will be allowed.

Once a model is substituted due to being irreparable it must take no further part in the contest.

#### **7.3.1.6**

##### **(5.3.2.2) Launching - General**

Delete the first paragraph and replace with :

Electric winches shall be set up under the direction of the CO. As far as possible the CO will arrange the winch lines to be lined up with either the actual or expected wind direction. If the wind direction should change then the CO may change the winch layout, even if this occurs within a round. If, at the discretion of the CO, the winch layout is changed within a single group of the speed task then the results of that group shall be annulled and the whole group shall re-fly the task.

The layout of the bases may be changed during a contest at the discretion of the CO. Under normal circumstances the layout of the bases will only be changed if the electric winches have to be moved away from the original location of Base A.

Launching may be made by winches but only if each winch meets in all respects paragraph 5.3.2.2 in the FAI rule book from (a) through to (s) Take special note of the battery specification.

Each winch must be issued with motor and battery stickers, which must be displayed on the relevant parts.

The motor sticker must show the Amps drawn when the motor is stalled and the m ohms indicated by the test. The battery sticker must state the battery type, it's rating in ampere- hours plus the SAE, DIN, IEC/CEI or EN specified ON the battery by the manufacturer.

Both stickers must show the name of the winch owner, the date of the test, test number and be signed by the tester. A separate record of each test should be kept for future reference and checking if necessary.

**NOTE** - if more than one battery is to be used on a winch, each battery must be tested on that winch and separate tests and stickers issued in each case.

The winch test and stickers shall be valid for a maximum of two years.

**Reminder.** If any changes are made to any part of the winch within two years the winch must be re-tested.

**7.3.1.7 (5.3.2.2.b.2 (c))** Delete the sentence

'The battery may not be charged on the launching line'

**7.3.1.8 (5.3.2.2)** Add the following paragraphs

- (k) There must be quick release mechanisms on the power leads to the battery in order to remove power from the motor in an emergency. (Connections to the battery must be removable without the need for tools).
- (l) The power lead connections must be open ended to allow quick release from the battery.
- (m) The winch operating foot switch must be easily detachable from the winch and/or an on/off switch must be inserted into the foot switch system.
- (n) In the case of electric motor launched models, a designated launching area shall be provided on the safety side of Base A adjacent to the winch line. There must be sufficient room for safe launches to be made without interference with the towline launched models.

In all tasks, if re-launches are required, the model must be returned to this area for that purpose.

**7.3.1.9 (5.3.2.3) Task A - Duration**

(d) Add the following paragraphs

Competitors are responsible for the fixing of the landing tape to the ground at the site of their chosen or indicated landing spot.

Competitors shall arrange for their flights to be timed by their helpers. Any person timing for a competitor shall be deemed to be a helper for that competitor. If the flight time is miss-judged by the timekeeper a zero score may be awarded. However, at the discretion of the CO, the CO's estimate of the shortest likely flight time or longest likely flight time may be awarded if the flight is miss-judged by the timekeeper.

Competitors shall be assigned landing spots under the direction of the CO.

## **7.3.2 UK F3B SOARING LEAGUE**

### **7.3.2.1 Introduction**

Entry to BMFA F3B league events is open to all.

It is expected that non-BMFA members must be able to produce evidence of valid insurance cover. This may be LMA or SAA membership of a bona fide non BMFA affiliated club which carries equivalent cover.

NOTE: Household insurance is not acceptable.

If suitable insurance cannot be shown then temporary membership of the BMFA is available at £5 for 30 days and must be paid at the time to the contest director. The CD

must pass on the competitor's details and fee to the BMFA immediately after the contest.

A BMFA contest will only be considered to be valid if the date, venue and details of method of entry have been published on the BMFA web contest and events calendar at least one month prior to the date of the competition. If a contest has been appropriately advertised and cannot proceed due to circumstances beyond the control of the organisers at the location or date, a re-organised contest may still be valid provided the possibility of such is included in the original notice and the competitors are made aware of this, plus a suitable site is available.

Alternatively a re-organised contest may be held provided the changes are published on the BMFA web contest and events calendar at least 7 days before the original date and any registered entrants are notified of the changes directly by the contest organisers

Due to varying competitor entries, it is not always possible to run two leagues (A & B) simultaneously.

The main (A) league will be open to all competitors, however If there are sufficient competitors, minimum of 3 (three) requesting to fly in a B league, at the CD's discretion, a B league will be operated periodically.

A minimum of 6 (six) competitors are required to start a contest for it to be valid for League scoring purposes. If the numbers reduce significantly during the contest, the CD may abandon the contest for logistic and safety reasons.

In addition as there is an increase in the number of competitors wishing to launch models by means of an on board electric motor, the above will also apply with a separate scoring arrangement, in this case it will then be nominated as the B league. However competitors wishing to be included in the main (A) league may still do so.

Competitors wishing to enter both a winch and an electric motor launched model may do so, i.e. double entries are allowed but only in this case. The competitor must specify which type of model he wishes to be posted as his official score.

NOTE: As is the case with a separate B league. Scores obtained by electric powered models will not count toward team places in FAI World or Continental Championships until such time as the FAI changes the rules.

#### **7.3.2.2 Contest Entry**

- (a) Except in exceptional circumstances competitors must pre-enter the contest and in this case there is an available space in the matrix. The entry to be received by the Contest Organiser (CO) or any person delegated to compile the matrix by 6-00pm Wednesday (or later at the discretion of the CO) in the week preceding the contest. Entries received after that time will invoke a double entry fee. One late entry per season per competitor will be allowed at the discretion of the matrix adjudicator.
- (b) Entries not complying with rules will be rejected.
- (c) Entries on 2.4 GHz are now the norm but competitors may still enter on the recognized 35 MHz frequency providing the site of the contest allows this.
- (d) Proof of BMFA membership must be provided however if this is not available or in doubt the competitor must pay an additional entry fee on the day to give 30 day temporary cover in accordance with the latest BMFA rule book. See 7.9.2.1.

#### **7.3.2.3 Definition of a League Contest Qualifying for a Final League result**

A contest qualifies for inclusion in the league scoring system if it satisfies the following requirements

- (a) A minimum of two rounds shall be completed (results shall be issued and trophies shall be awarded if a minimum of one round is completed).
- (b) A minimum of three competitors from the A-League must start the contest for it to qualify as an A-League contest.
- (c) A minimum of three competitors from the B-League must start the contest for it to qualify as an B-League contest.
- (d) The contest is flown to the current FAI F3B rules plus rules **7.26, BMFA UK Variations on F3B as amended by:**
  - (i) BMFA UK F3B Soaring League Rules (see 7.9.2.1)
  - (ii) BMFA UK F3B Soaring league Guidelines (See 7.9.2.3)
  - (iii) Any CIAM amendments to the FAI F3B rules

#### 7.3.2.4 League Contests Qualifying for Final League results

- (a) Only those contests that comply with 7.9.2.1.3 will be considered for the final classification. A competitor's final league score will be determined by adding up the scores achieved in the league contests qualifying for the final league result as shown below:
 

|                       |   |                                       |
|-----------------------|---|---------------------------------------|
| Seven league contests | - | Best five results from seven contests |
| Six league contests   | - | Best four results from six contests   |
| Five league contests  | - | Best four results from five contests  |
| Four league contests  | - | Best three results from four contests |
| Three league contests | - | Best two results from two contests    |
| Two league contests   | - | Two results from two contests         |
- (b) A competitor who does not compete in a league contest will be assigned a score of 0.0 league points for that contest.
- (c) A maximum of seven (7) and a minimum of four (4) league contests will be scheduled with a single reserve date. The reserve date will be invoked when one of the scheduled league contests fails to meet the requirements of 7.9.2.1.3.
- (d) An additional reserve date may be added in the event the BMFA Nationals are cancelled or abandoned due to bad weather.

#### 7.3.2.5 League Scoring

- (a) League results. The competitor with the highest score in each contest is assigned 100 points. the results for all other competitors in that league contest are calculated using the formula:

$$\text{Competitor's result} = \frac{\text{Competitors event score}}{\text{Event winner's score}} \times 100$$

- (b) Competitors will obtain the permission of the CO if they wish to leave the contest before it's completion (this is to ensure that sufficient competitors are available to organise the contest in it's final stages).

#### 7.3.2.6 Promotion / Relegation

- (a) The top 10% (rounded up to the nearest whole number) of the B-League competitors will be promoted to the A-League at the end of the contest year.
- (b) A-League competitors will be relegated to the B-League in accordance with either clause 7.9.2.1.6.(c) or (d), whichever gives the greater number of competitors to be relegated.

- (c) A-League competitors who achieve less than 70% of the winning final A-League result will be relegated to the B-League at the end of the contest year.
- (d) The bottom 10% (rounded up to the nearest whole number but not less than one) of the total sum of A-League competitors will be relegated to the B-League at the end of the contest year.
- (e) In the event of a competitor obtaining a high score at the BMFA F3B Nationals they will be entitled to compete in the "A" League the following season.  
To qualify they must be placed 1<sup>st</sup> in the case of 1 to 10 competitors scoring at The Nationals.  
In the case of 11 to 15 scoring competitors the requirement is to be placed 1<sup>st</sup> or 2<sup>nd</sup>.  
In the case of 16 to 20 scoring competitors the requirement is to be placed 1<sup>st</sup> 2<sup>nd</sup> or 3<sup>rd</sup> and so on as the number of competitors increases.  
In addition to qualify the competitor must have also scored in 33% of valid league competitions in the same season rounded up to the nearest whole number.  
I.E. in the case of 6 league competitions having been completed the qualification would be valid scores in 2 of them as would be the case in 5 or 4 valid competitions. In the event of only 3, 2 or 1 valid competitions having been completed the requirement would be to have scored in only 1 of them.

#### **7.3.2.7 League Qualification**

- (a) Competitors must fly in the B-League before gaining promotion to the A-League.
- (b) Competitors who have qualified for the A-League will only compete in the A-League.
- (c) For the purposes of rule 7.9.2.1.6.(a), only those B-League competitors who have scored in two contests will be considered.

#### **7.3.2.8 Completion of the Contest**

- (a) The CD will aim to complete three rounds at each contest. The contest organiser will schedule two rounds if there are too many entrants to complete three rounds within the time allowed.
- (b) If the contest has not started by 12.30 pm then the contest will be cancelled.
- (c) Competitive flying will cease at 5.45 pm unless the last task of the round in progress has started in which case the round will be completed. However, if after 5.45 pm the sum of interruptions due to any reason outside the control of the contest organiser exceeds 20 minutes the round in progress will be abandoned.
- (d) Two rounds expected - If at any time during rounds one or two it becomes impossible to start the last task of round two by 5.45 pm then the round in progress will be abandoned and the contest ended.
- (e) Three rounds expected - If at any time during round three it becomes impossible to start the last task by 5.45 pm then round three will be abandoned and the contest ended.
- (f) If two (2) full rounds are completed before 4-00pm a third round will be started at the discretion of the CD, taking into account pending weather changes, light and competitor numbers.

All tasks completed will be taken into account but if the same task in an earlier round or the additional one is of lower value, that score will be discarded.

Following 5-00pm the task in progress will be completed but no further task started.

## **7.3.3 UK F3B SOARING LEAGUE GUIDELINES**

### **7.3.3.1 Contest Schedule**

- (a) Winch testing - 9.15 am to 9.45 am
- (b) Briefing - 9.45 am
- (c) Start of first round - 10.00 am
- (d) Completion - See rule 7.9.2.1.8

### **7.3.3.2 Task Flying Order**

- (a) Task grouping of 'Official intensive' tasks will provide easier co-ordination of helpers and continuous flying for each category. The usual order of task, League, round will be as follows:

DUA1, DUB1, DIA1, DIA2, DIB1, DIB2, SPA1, SPA2, SPB1, SPB2, DUA2, DUB2, DUA3, DUB3, DIA3, DIB3, SPA3, SPB3

The order may be changed at the discretion of the CD depending on the circumstances.

### **7.3.3.3 Contest Officials**

- (a) Base A Officials will confirm the number of legs completed corresponding to the appropriate signals by calling out as the model passes the bases i.e. "Bell-6, Bell-7" etc.
- (b) Contest Organiser (CO) - Person nominated by the SFTC for the administration of the BMFA UK F3B League.
- (c) Contest Director (CD) - Person or persons nominated by the CO to direct the contest for A-League and B-League. Typically one person will be chosen from each league to act as CD for the league in which they are not competing.

### **7.3.3.4 Winches**

- (a) Winch owners will be responsible for the secure fixing to the ground of their winch and their turn-around pulleys.
- (b) It is each competitor's responsibility to ensure that their winch complies with the FAI F3B rules particularly rule (7.14).5.3.2.2.(b) which refers to the internal resistance of the motor.
- (c) Winch testing will be performed by the CO or any other person nominated by the CO.
- (d) Winches will be spot tested throughout the course of each contest. Any winch owner whose winch fails to meet the requirements of rule (7.14) .5.3.2.2 (c) will have their score nullified for that particular task.

### **7.3.3.5 General**

- (a) All competitors will be required to help on the course at some time during the contest. A-League competitors will be required to man the course for the B-League and vice-versa. The contest will run more smoothly if competitors anticipate helping on the course and take breaks during less official intensive tasks i.e. Speed task C.
- (b) Competitors must arrange their own line retriever and timekeeper.
- (c) Competitors may be allowed one trimming flight before the briefing starts at the discretion of the CD taking in consideration the time available and the expected weather conditions. Further trimming flights may be allowed also at the discretion of the CD.

### 7.3.3.6

#### Protests

- (a) Any decision made by the CD may be protested in writing within 30 minutes of the decision being made. The protest is to be handed to the Jury along with a fee of twice the entry fee which will be returned if the protest is upheld.
- (b) The jury will be nominated by the CD at the start of the contest. The jury members may be pilots of either league or an observer. If one of the Jury is directly involved in the protest then he will stand down from the Jury while the protest is being considered.
- (c) The details of all protests will be reported in BMFA F3B news.

**NOTE** - If the protest is dismissed by the Jury, the protester retains the right to take the protest direct to BMFA Council through the BMFA Competition Secretary. For details of the procedure see General Rules, Section 2, Rule 2.2.13 which is repeated as Silent Flight General Rule 7.2.11 in this rule book.

### 7.3.4

#### UK F3B TEAM SELECTION

- (a) A team trial will only be held if more than three competitor's state their willingness attend the Championships. The entry fee for the Team Trial will be ten (10) times the standard League entry fee at the time. Each potential team member must provide at least one person, sufficiently knowledgeable and competent to assist in the running of the Team Trial, especially in signaling at the Bases in tasks B and C. Any surplus after the cost of running the Team Trial will be divided equally between the successful competitors attending the Championships.
- (b) NOTE A Junior Competitor and a reigning World Champion are entitled to a Team place.
- (c) If only three competitors or less wish to attend a Championship the approval of their entry will be based on their ability and commitment shown in the League contests on the same basis in (a) plus their availability of additional money bearing in mind BMFA funding covers only part of the costs and the fact a minimum of two top class models are required. The decision in all cases will be made via the SFTC, the Competition Secretary and finally the BMFA Council
- (d) World Cup or Eurotour contests may also count in the same proportions as the completed BMFA League contests. i.e. In the case of five (5) valid League contests having been held up to three (3) World Cup or Eurotour Contest scores may be counted.
- (e) Until such time FAI rules allow, League scores obtained using electric motor launched models will not count towards Team Selection Places.

### 7.3.5

#### Electric Motor Launching of F3B Models

#### 7.3.5.1

##### Electric F3B Model Specification

- (a) A model aircraft which is provided with an electric motor and a Lithium Polymer battery to launch the model to a pre-determined height. No limit on motor specifications. All other existing FAI specifications apply to these models.
- (b) Electric flight batteries may be charged or changed at any time during the contest but mechanical or chemical modifications to the individual cells e.g. to reduce the

weight are not permitted except the insulation sleeves of individual cells may be changed.

Each electric powered model must be fitted with an approved height limiter of the type used in e-soaring or F5J contests (see appropriate section in BOOK 2 ELECTROFLIGHT) to control the height and time at which the electric motor drive is cut-off from the moment of launch.

- (c) The specific height at which the power to the motor is cut-off and the maximum run time of the motor is to be determined before the start of the contest by the CD; but if conditions change substantially due to wind shifts, a difference in cloud base or after long breaks due to rain, even between slots in a round, the settings may be changed at any time.

In the case of Task C Speed, should a change be necessary within a round the whole group will re-fly.

- (d) Whenever possible the height setting should be determined from the first flight in each task by a reading from a winch launched model fitted with telemetry system to transmit the height of the launch. To facilitate this once the matrix has been compiled, the first slot on the list including a model is fitted with such, should be flown including all pilots already assigned to that slot, whoever they may be.

It follows that any slot containing a model using an electric motor should not be flown until the above has been concluded. If this is not possible, e.g. in slots having all models fitted with an electric motor fitted (c) or (f) will apply, especially if every model is motor launched. In which case the actual setting is irrelevant

- (e) The rule which forbids the use of telemetry except for receiver and battery power information will not apply in these circumstances but is only for reading the initial launch height. Any further use at any time during the slot will result in the pilot's score being annulled.

No use of earpieces will be allowed, the height reached to be confirmed to the CD or other designated person by the pilot or his timekeeper. If it is found that the information provided is incorrect the competitors score will be annulled.

All models will have the same height setting in whichever League, but different motor cut-off times may be introduced for particular models to cover all types of motor power ranges.

- (f) Alternatively in contests which have both launching methods and it is not possible to implement (d) due to a lack of a model fitted with altimeter telemetry, a test flight should be made by winch launched model to determine as far as possible a fair setting to the height limiter.

NOTE: It is NOT compulsory to set the height limiter to the agreed altitude if the competitor is not comfortable with that height, he may set his cut-off point to any height below the one stipulated

At all times it is the competitor's total responsibility to ensure that once the setting of the height limiter has been determined, he sets his own unit at a figure (usually) lower than the specified one so that the natural zoom when the motor cuts does not take the model more than 10% above the official height within 10 seconds of the motor stopping.

The most popular height limiters in use will restart the motor after 10 seconds unless a cut-off switch is operated within that time. Therefore, it is ESSENTIAL a suitable such switch is fitted to the Tx and must be used, otherwise if the motor inadvertently re-starts during any task, the model must be landed and the task re-started and completed within the existing working time.

### 7.3.5.2

#### Launching.

- (a) All launching must take place in an area designated by the CD along the same line but, if applicable, separate from the winches. All re-launches must be made from this area for safety reasons.
- (b) The aircraft must be launched in the same direction as winch launched models i.e. in the direction of Base B at full power with no provision to vary the output of the motor by use of a throttle.
- (c) In all tasks the (A B & C) The model must be launched forward in a straight line and the competitor must ensure, before turning, that the motor/time cut-off has operated forward of Base A as near to base B as possible and in front of the turn round pulley line (i.e. within 200m) before the task may be started. If necessary, checks will be made and any infringement will necessitate the model to be landed for a re-launch.
- (d) For safety reasons, if possible, models should be provided with a method of deactivating the motor during the process of retrieval especially for re-launching purposes.
- (e) A protest may be made by any competitor if it is suspected a competitor's height limiter is faulty or the height and cut-off time has been changed from the designated settings. In addition if it appears that an advantage has been gained by the motor being inadvertently or deliberately switched on, if the protest is upheld the competitor's flight will be annulled. The protest must be made during the flight or at the latest as soon as the model has landed and before the drive train has been disconnected.
- (f) A charge of double the contest entry fee will apply but if the protest is upheld the fee will be returned. If the protest result is disputed the usual BMFA procedures may be followed via the BMFA Contest Secretary and up to Council if necessary.
- (g) Random checks may be made by the CD or any other designated official at any time during the contest as indicated in (e). Should the designated height limit have been exceeded, the previous flight will be annulled. If it is found regular infringements are occurring the CD has the right to insist that all models are checked at the conclusion of each flight. In the case of deliberate and persistent violation, as in the general rules, the competitor may be disqualified.
- (h) To enable checks to be carried out, a reader of the type approved in e-soaring or F5J suitable for his type height limiter must be provided by the competitor. But if the result is not found to be conclusive the height limiter will be removed from the model and the whole flight checked by a trace shown on a PC or laptop.

NOTE. It is recommended that the height limiter is zeroed between each flight by disconnecting it completely from the model's power source, i.e. to avoid confusion regarding which flight may be in dispute. But not before if a protest or CD's check is to be made.

It is MOST important that to minimize protests, if the height limiter settings are required to be changed during the contest, the limiter is disconnected from the model power source and a separate source be applied to ensure the limiter has been correctly changed. If this is not done the previous limiter settings may be retained. Which if the height settings are required to be increased, the competitor would be at a disadvantage or penalized if a reduction to the model's cut-off height has not been implemented.

NOTE. In contests utilizing mixed launching methods references to safety area penalties still apply, if either type of model lands within the winch lines. This is 300 points which will be deducted from the competitor's final score.

#### **7.3.5.3 Task Duration.**

- (a) The model must be launched from the designated area, the timekeeper must only start the stopwatch when he has confirmation from the competitor that motor has stopped and the override switch has been engaged.
- (b) If the motor is re-started at any time during the task the timing watch must be stopped immediately and no landing points be awarded. However if the competitor wishes to re-launch he may do so an unlimited number of times but only from the designated area, in which case landing points may be awarded if the flight is completed without re-starting the motor and within the existingslot time rules. All existing safety rules apply

#### **7.3.5.4 Task B Distance.**

- (a) The model must be launched from the designated area and the task only starts as the model passes Base A in the direction of Base B with the motor switched off.
- (b) The motor may be re-started at any time but only the completed legs up to that point will be counted. However the competitor may land the model for a further attempt in the normal way by re-launching but only from the designated area. Only the legs in the last attempt within the working or slot time will be counted. At the end of the working or slot time the motor may be re-started to facilitate a safe landing. Normal safety area penalties will apply

#### **7.3.5.5 Task C Speed**

- (a) The model must be launched from the designated area, multiple launches if required, may be made before the official attempt, but all re-launches must be made from that area.
- (b) All re-launches must be called before the model passes Base A in the direction of Base B or an official attempt will be called. In this case if the motor is still running a zero score will apply and no further attempts are permitted.
- (c) The official attempt commences when the model passes Base A in the direction of Base B and must be made with the motor switched off, any re-start of the motor before the four required legs are completed will result in a zero score. No further attempts are then permitted.
- (d) The official attempt must be started within one minute of the motor being switched off or the model must be landed and re-launched. All the normal safety rules and penalties apply. The task must be completed within the designated working time or a zero score will apply
- (e) On completion of the task the motor may be re-started to facilitate a safe landing without penalty, other than those regarding safety.

## **7.4.1 UK Variations on Class F3J Thermal Duration Gliders**

### **7.4.1.1 Launching**

The following defines the requirements for flying and defines the requirements if using electric winches to launch as an alternative to hand tows.

#### **7.4.1.1.1 (1) Electric winches**

- (a) At all UK national events electric winches may be used as an alternative to launching by hand towing. The winch must have a maximum power specification no greater than that defined for use in F3B events. All winches used in competition must have a recognised test certificate or be able to pass a test if required. For all winch specifications and testing see F3B rules Para 5.3.2.2 Launching.
- (b) Turn-around devices, which must be used, shall be no more than 150 meters from the winch.

#### **7.4.1.1.2 (1.1) General Rules**

- (a) All launching shall take place in an area as designated by the organiser with provisions made for launching into the wind. Launches may be made with an electrical powered winch as an alternative to hand towing. The winch must be capable of meeting the requirements as set out below.
- (b) Upwind turnaround devices, which must be used, shall be no more than 150 m from the winch. The height of the axis of the turnaround pulley from the ground must not exceed 0.5 metre.
- (c) Release of the model must occur within approximately 3 meters of the winch or, if there is a safety corridor in use, then launching must take place at the front of the corridor (front being where the winch is positioned) with both feet of the launcher inside the corridor. An automatic means must be provided to prevent the line unwinding from the reel during launch.
- (d) The towline (which must be of non-metallic material except for linkages) must be equipped with a pennant having a minimum area of 5 dm<sup>2</sup>. A parachute (5 dm<sup>2</sup> minimum area) may be substituted for the pennant provided it is not attached to the model aircraft and remains inactive until the release of the cable. During complete rewinding of the line on to the winch, the parachute, if used, must be removed or deactivated.
- (e) After release of the model aircraft from the towline, the towline should be rewound without delay by operating the winch, until the parachute (or pennant) is approximately 4 metres from, or nearer to, the turnaround pulley. However a winch must not be operated when the towline is lying on the ground and lying across other towlines or if it strikes another towline during launching
- (f) The flight is cancelled and a penalty of 1000 points is deducted from the final counting if, during the launching phase of the flight, any part of the winch or turn around related equipment (excluding parts of the line) becomes detached or is ejected in any way. No further attempt is permitted for that flight.

#### **7.4.1.1.3 (1.2) Winch Requirements**

- (a) The winch shall be fitted with a single starter motor. The starter motor must come from serial production. It is allowed to fit the arbour of the rotor with ball or needle roller bearings at each end. The drum must be driven directly by the motor. Any further change of the original motor will lead to disqualification. When in use, the drum must have a fixed diameter.
- (b) The power source shall be a 12 volt lead/acid battery.

- (c) The battery must supply the winch motor with current through a magnetically or mechanically actuated switch. The use of any electronic device between the winch motor and the battery is forbidden. A competitor may interchange various parts as he wishes provided the resulting winch conforms to the rules.
- (d) There must be a quick release mechanism on the power lead to the battery in order to remove power from the motor in an emergency. (Connections to the battery must be removable without the need for tools).
- (e) The motor must not be cooled, and the battery must not be heated.
- (f) The purpose of the above rules is to limit the power used for the launch. Therefore with the exception of the single winch battery, line stretch, and the small amount of energy in the rotating rotor and winch drum, no energy storage devices like flywheels, springs, weights, pneumatic devices or any similar devices is allowed.
- (g) The complete winch (battery, cables switch and motor) must have a total resistance of at least 23.0 milliohms. The allowed resistance may be obtained by long cables or by adding a fixed resistor or resistors between the motor and the battery. The design must not allow for an easy change of the total resistance at the launch line (e.g. by shorting the resistor, or resistors) except for opening and closing the circuit.
- (h) The plus and minus poles of the battery must be readily accessible with alligator (crocodile) clips for voltage measurements. One of the cables from the battery (through which the total current flows) must be accessible for a clamp transducer (clamp meter).
- (i) The battery must stay unloaded for at least two minutes after any previous test or a launch before being measured.
- (j) The winch/battery combination should be tested by measuring the open circuit battery voltage and also the battery voltage and current flowing with the winch motor stalled. The current is measured 300mS after power is applied. From these readings the total circuit resistance (which must NOT be less than 23 milliohms) is calculated by dividing the open circuit voltage by the stalled current. Voltage should be measured by a digital voltmeter/multimeter and a current transducer probe is the preferred method of measuring the stalled current. The battery voltage when the winch is stalled must not be less than 9 volts if fully charged or 8 volts if used.

Conformance with these requirements can be demonstrated by use of either the BARCS winch test apparatus or the similar equipment available through the BMFA, F3B flyers. If the winch cannot be mechanically locked, the use of a strop is allowed

Following a satisfactory test, a certificate will be issued and stickers of conformance affixed to both the winch and battery. If motor, leads or battery are changed, the winch needs to be re-tested for conformity.

- (l) The organiser must appoint at least one processing official, who will process any winch which for which a certificate of conformance is not available.
- (m) If test apparatus is available on the field but a competitor still insists on commencing flying with a winch for which no certificate is available and the winch is subsequently tested and found not to conform, the flight is penalised with 1000 points. This applies to the flight before the test. The penalty of 1000 points will be a deduction from the competitor's final score and shall be listed on the score sheet of the round in which the penalisation occurred.

- (n) If no test apparatus is available on the field but a competitor is in possession of a winch for which no certificate is available, and which the CD believes may be more powerful than allowed by the above requirements, the CD has the right to ban that winch until a certificate is available and require the competitor to use a winch which does meet the requirements, although such a winch may belong to another competitor.
- (o) The certificate of testing which is generated for each tested winch/battery combination, must be produced on request from the contest CD or Organiser. The certificate should include the following details:
  - Amps drawn when motor stalled
  - Battery voltage when motor stalled
  - Battery unloaded voltage
  - The total resistance of the system.
  - The battery type and spec.
  - Motor type.
  - Test number

#### **7.4.1.1.4 (4) Retrieval of Towline/s**

- (a) The towline must be retrieved immediately after release of the model from the launching device. The method of retrieval of the towline line will vary with launch method and prevailing conditions. The method of retrieval must ensure that the towline is recovered expeditiously so as to prevent conditions that will hinder other fliers either launching, waiting to launch or in a manner that could cause damage to other competitors launching equipment.
- (b) It is the competitor's responsibility to ensure he has adequate helpers and that they are adequately briefed/practiced in retrieval of launching equipment.
- (c) If after due warning a competitor continues to hinder other competitors or damage their equipment then the CD can impose a 100 point safety penalty, to be applied to the final score for the competition.

### **7.4.1.2 5.6.12 Advisory Information**

#### **7.4.1.2.1 5.6.12.1 Organisational Requirements**

Delete (c) and replace with:

- (c) To be fair the minimum number of flyers in one group is three. As the contest proceeds some competitors may be obliged to drop out for various reasons. When a group occurs with two or fewer competitors in it the organisers may move up a competitor from a later group ensuring, if possible, that he has not flown against any of the others in previous rounds and, of course, that his frequency is compatible.

#### **7.4.1.2.2 5.6.12.2 Timekeepers Duties**

Delete (b) and replace with:

- (b) Competitors shall arrange for their flights to be timed by their helpers. Any person timing for a competitor shall be deemed to be a helper for that competitor. If, for any reason, the CD decides that the flight has been miss-timed by the timekeeper, a zero score will be awarded.

If a transmitter control compound is in use, the timekeepers will be responsible for handing transmitters to competitors prior to the start of the working time and for returning them to Control immediately after the end of the flight.

## **7.4.2 BMFA F3J League**

### **7.4.2.1 Purpose**

To encourage wider participation in F3J and to provide a fair basis for selecting a UK representative team.

### **7.4.2.2 League Events (General)**

- (a) The league will consist of an unlimited number of competitions organised at any venue within the United Kingdom between 1st January and 31st October each year.
- (b) Entry to BMFA F3J league events is open to all. Non BMFA members should refer to General Rule 2.1.6 (d) and (e).
- (c) Entry will be free to junior competitors.

### **7.4.2.3 Definition of a League Contest**

A contest qualifies for inclusion in the league scoring system if it satisfies the following requirements.

- (a) A minimum of three rounds must be completed but more can be included if time permits. These would be followed by a two or more round fly off if possible to decide the winner on the day. Approximately 15% of the original competitors would qualify for the fly off, subject to a minimum of three.
- (b) A competitor, regardless of their domicile, may choose to enter any league competition.
- (c) A minimum of 8 competitors must start the contest and there must be at least 3 pilots in each slot flown.
- (d) The contest will be flown to the current FAI F3J rules plus UK Variations.

### **7.4.2.4 League Scoring**

- (a) Only completed contests as in 7.9.1.1.3 above shall be scored.
- (b) A competitor's score will be the aggregate of points scored in all qualifying rounds of a contest less a dropped round score if applicable.
- (c) Competitor's league scores are to be calculated as follows:  
The highest placed competitor, before the fly-off, is awarded 100 league points and the other league qualifier's scores use the formula:

$$\text{Competitor's league score} = \frac{\text{Competitor's event score}}{\text{Winner's event score}} \times 100$$

Fly off bonus points according to the table below are then added:

|     |            |
|-----|------------|
| 1st | 3 points   |
| 2nd | 2 points   |
| 3rd | 1.5 points |
| 4th | 1 point    |
| 5th | 0.5 points |

### **7.4.2.5 League Contests Qualifying for Final League results**

- (a) Final League positions shall be determined by the sum of the highest points from 4 qualifying league competitions including the fly off bonus.

- (b) The score from Interglide, if it takes place, will count as one of the qualifying scores
- (c) Any single F3J Eurotour result, from a competition which is open to all competitors, can count for a competitor's score in addition to any of the listed UK competitions.

#### **7.4.2.6 Contest Entry**

- (a) Contest entry must be by pre-entry to the Contest Director (CD) in the manner required on the entry form.
- (b) Entry will be free to junior competitors.

#### **7.4.2.7 Protests**

The protest procedure is as noted in the BMFA General Rules, Section 2, rule 2.2.13 and repeated in this rule book as General Rules for Silent Flight Contests, rule 7.2.11, with the following additions:

- (a) If one of the nominated jury members is directly involved in a specific protest then that person will stand down and a replacement juror will be nominated by the CD to act while that protest is being considered.
- (b) In consideration of the problems which would be caused to the running of the rounds of the contest, all protests should be passed to the CD in writing by the competitor within 30 minutes of the CD's decision being made. The protest must be accompanied by double the entry fee which will be returned if the protest is upheld.

### **7.4.3 UK F3J Team Selection**

#### **7.4.3.1**

- (a) The final league positions shall be determined by the sum of the scores achieved (including the fly off bonus) from:-
  - (i) Interglide and the best 3 other qualifying scores (total 4), where 5 or more competitions take place.
  - (ii) Interglide and the best 2 other qualifying scores (total 3), where 4 competitions take place.
  - (iii) Interglide and all others where 3 or less competitions take place.

Notes: (a) A single score from a Eurotour F3J competition, other than Interglide, can be counted as a qualifying score instead of one of the UK league results.

(b) In the event of Interglide not taking place, then another qualifying score can be included to make up the total.

- (b) The pilots who achieve 1st, 2nd and 3rd places in the BMFA F3J Team Selection League shall be recommended to the BMFA Silent Flight Technical Committee (SFTC) as the UK Senior team. Competitors placing 4th and below shall qualify, in order corresponding to their final classification, for senior team placing as reserves, 4th place being 1st reserve, 5th place being 2nd reserve, etc.
- (c) Junior pilots who achieve 1st, 2nd and 3rd highest places in the BMFA F3J League shall be recommended to the BMFA Silent Flight Technical Committee (SFTC) as the UK junior team. Junior competitors placing 4th and below shall qualify, in order corresponding to their final classification, for senior team placing as reserves, 4th place being 1st reserve, 5th place being 2nd reserve, etc.

Note: The FAI considers a competitor to be a junior up to and including the calendar year (1st January – 31st December) in which they attain the age of 18 years.

- (d) For the purposes of team selection, juniors who attain the age of 18 years during the team selection year will be deemed a senior. This only applies when the team selection year precedes the Championship year.
- (e) The team selection process will be done each year even if there is no Championship scheduled for the following year. This is to ensure that official team(s) have been selected if a Championship is arranged at short notice.

## **7.4.4 UK F3J TEAM SELECTION LEAGUE GUIDELINES**

### **7.4.4.1 Winches**

The use of winches is allowed at UK national F3J league events provided the winch & battery combination meets the requirements of the this Rule Book (UK Variations on Class F3J, section 7.4.1.1 rules).

Note: As Interglide is a Eurotour event hand towing only is permitted

### **7.4.4.2 Contest Organisation**

The schedule, entry fee, date and method of entering shall be determined by the CD and published at least 3 months prior to the event on at least one of the BARCS or Quiet Flight websites. The basic details of the contest must be notified on the BMFA website or in the BMFA News at least one month before the contest.

### **7.4.4.3 Contest Officials**

- (a) The League Organiser (LO) is the person nominated by the SFTC for the administration of BMFA UK F3J League.
- (b) The Contest Director (CD) is the person nominated by the LO to direct the contest. The LO may nominate themselves as CD. The CD will appoint assistants from local volunteers as required.
- (c) The CD will nominate a three man jury plus a reserve juror at the start of the contest. The jury may consist of pilots, officials or observers.

## **7.5 100S THERMAL SOARING**

### **7.5.1 Objective**

To provide a thermal soaring competition for standardised R/C gliders.

### **7.5.2 Model Characteristics**

- (a) Maximum projected wingspan will be 100 inches.
- (b) Directional control shall be by the use of rudder and elevator only.
- (c) The use of airbrakes or spoilers, excluding any such device used additionally for directional control or camber changing devices giving altered lift generation, shall be permitted.
- (d) Models using a flying wing or canard configuration are exempt from the wing control surface restrictions in rule 7.5.2.(c) above.

### **7.5.3 Certification**

At the Contest Director's discretion, or upon the demand of two competitors, any model may be checked for compliance with the above rules.

### **7.5.4 Use of Models**

- (a) A competitor may use a maximum of three models.
- (b) Component parts of the two models may be interchanged but not with those of other competitors.

### **7.5.5 Ownership of Models**

- (a) Any individual model may only be flown by one entrant in any particular competition.
- (b) The entrant shall be the genuine owner of the model and, as proof of ownership, the entrant's name or BMFA or BARCS number shall be displayed on the wing of the model in a permanent and prominent manner.

### **7.5.6 Competition Flights**

- (a) The competitor has the right to TWO attempts at each official flight, providing that he declares his first attempt to his own and one adjacent timekeeper, within 30 seconds of release of the model from the towline. He may land at his own discretion but must make his second attempt within the allocated slot time.
- (b) There is an official attempt at flight when the model has left the hands of the competitor or his/her helper under the pull of the launching apparatus.
- (c) All flights to be timed by two stop-watches, one of which must be digital, and in the event of both stop-watches malfunctioning the flight will count as zero.
- (d) Re-flights.
  - (i) At the discretion of the CD, a slot may be re-flown in its entirety, if
    - (1) In the CD's opinion, an outside event has occurred which has interfered with the fair running of the slot.
    - (2) In the CD's opinion, there has been a malfunction of some part of the contest equipment, necessitating a re-flight.

In the event of either of these situations, the first flying slot is to be considered null and void with all slot scores cancelled, and all competitors in the slot must re-fly, starting from scratch, when called upon by the CD. Should any pilot not be prepared to re-fly, his or her score for that entry in that round will be zero.

- (ii) An individual pilot may request a re-flight if, in his opinion, his flight was hindered or aborted by an unexpected event, not within his control. At the discretion of the CD the pilot may be allowed to re-fly again in another slot, providing there is a vacant spot in the matrix, where in the opinion of the CD, the pilot has valid reasons for requesting a re-flight. In this event the pilot will forfeit his first score and the result of his repetition flight will be his official score.

## **7.5.7 Cancellation of a Flight and/or Disqualification**

- (a) The flight is cancelled and recorded as a zero score if the competitor used a model not conforming to any items of the Model Characteristics of the class entered (7.5.2) In the event of intentional or flagrant violation of the rules, in the judgement of the Contest Director, the competitor may be disqualified.
- (b) The flight is cancelled and recorded as a zero score if the model loses any part in flight, except where this occurs as the result of a mid-air collision with another model or towline. The loss of any part of the model during the landing (touchdown) will not be recorded.
- (c) The flight is cancelled and recorded as a zero score;
  - (i) If after landing some part of the model does not come to rest within 75 metres from the marked centre of the designated landing area.
  - (ii) If the model comes into contact with another person, unless that person has entered the designated landing area before all models have landed and that person is thus in violation of rule 7.5.10 (b). The Contest Director has the discretion to disqualify a flight if the flyer flies over or through the area in which the pilots are standing for launching and landing, at a height which is deemed to be dangerous.
- (d) The flight is cancelled and recorded as a zero score if the model is piloted by anyone other than the competitor.
- (e) The Contest Director has the discretion to warn or disqualify any pilot who deliberately executes unnecessarily dangerous manoeuvres.
- (f) If the layout of the field permits the suggested rectangular landing area downwind of the winch line, then it is recommended that a 'Safety Corridor' be set out of about 6 metres width with the upwind edge of the landing rectangle being the downwind edge of the safety corridor. This makes the safety corridor the 'Pilot's Box'. This corridor should extend for the full length of the flight line running to at least 10metres beyond the end of any designated landing and launching positions or any organiser required obstruction in line with this corridor, such as a control tent or table. All launches and re-launches should take place from the safety corridor at it upwind side. In the event that model or any part thereof comes to rest, after landing, in the safety corridor a penalty of 100 points shall apply. In the event that the model hits any person in the safety corridor a penalty of 1000 points shall apply. This 1000 point penalty applies to a model hitting someone who is in the safety corridor, in other cases, where a model hits a person then clause 7.5.7 (c) above applies.

### 7.5.8

#### Organisation of the Flying Slots

- (a) The competition shall consist of a minimum of four rounds and the flying order for the rounds shall be arranged in accordance with the radio frequencies in use to permit as many simultaneous flights as possible.
- (b) The flying order must be scheduled in Rounds sub-divided into time slots.
- (c) The flying order shall be determined by a Matrix system (see appendices) such that, as far as possible, no competitor shall fly against another competitor more than once, except in the final fly-off.
- (d) Entry on the day of the contest will only be accepted if a vacant position is available in the matrix.
- (e) A competition number, derived from the matrix, must be allocated to each competitor and must be retained throughout the rounds.
- (f) Competitors are entitled to a minimum of 5 minutes preparation time which is counted from the moment he/she is called to take position at the designated launching area.
- (g) The organisers must indicate very positively the start of slot time both audibly and, if possible, visually (see appendix (1) for details).
- (h) The slot time shall be of exactly 8 (eight) minutes duration.
- (i) Audible and, if possible, visual signals must be given when 2 (two) minutes of the slot time have elapsed and also when 2 (two) minutes of the slot time are remaining
- (j) The end of the slot time must be very positively indicated both audibly and, if possible, visually, as for the start.
- (k) Any model airborne at the completion of slot time must land immediately.
- (l) During flights, pilots and their helpers shall proceed to and remain within a designated Pilot's Box outside the edge of the landing area.

### 7.5.9

#### Launching

- (a) The launch of the model will be by:-
  - (i) Hand held towline, with or without a pulley, only one person to tow.
  - (ii) Any anchoring of pulleys to be done by means of a ground stake.
  - (iii) Winch devices (mechanically or hand powered).  
Power winches may be used.  
Power winches should be laid out such that they allow hand towers to launch into wind at all times, whilst maintaining sufficient spacing between launch points.
- (b) The line length not to exceed 150 m when under a tension of 2 kg.
- (c) The towline must be equipped with a pennant or parachute having a minimum area of 5 dm<sup>2</sup>.
- (d) Towlines for each flyer must only be run out during the competitor's five minutes preparation period and must be retrieved by the end of the slot.
- (e) The towers shall remain in any area designated by the Contest Director.
- (f) The Contest Director shall designate take-off points that are arranged in a straight line. The model must be launched from the designated take-off point.

- (g) Any model launched prior to the start of the slot time must be landed and re-launched within the slot time. Failure to comply will result in cancellation of the competitors score for that round.
- (h) The release of the towline from the towers end is not allowed.
- (i) Deliberate weaving of a model on the line is not permitted, and will be declared an attempt by the CD. A relaunch shall be allowed. CD's should regard repetition as unsafe flying, and may disqualify the competitor.

#### **7.5.10 Landing**

- (a) The landing zone shall consist of a cross wind rectangle where, if the field size permits, the upwind end of the zone shall be a line positioned 7 metres downwind of the launch line (on which the power winches are located) and the downwind end of the zone shall be another 50 metres downwind of the zone upwind line. That is the landing zone is 50 metres deep. The zone shall extend out to the edge of the flying field in both directions.

If the field size is restricted the "downwind" edge of the landing zone shall be located upwind of the launch line with the zone's "upwind" edge being 50 metres further upwind of that.

Alternatively the CD may, if circumstances permit, layout a circle which shall be a 75 metre diameter circle or a similar sized area designated by the CD and placed to one side of the winches.

The centre of the landing area shall be marked in a visible way for instance by use of a spot or a cone.

- (b) Competitors may only retrieve their models on completion of the landing providing they do not impede other competitors and models.

#### **7.5.11 Scoring**

- (a) The flight will be timed from the moment of release of the launching device to:
  - (i) The competition of the slot time or,
  - (ii) The moment the model first touches the ground or,
  - (iii) The moment the model first touches any object in contact with the ground.
- (b) The flight score will be composed of ONE point for each FULL second of flight time.
- (c) A penalty of 80 (eighty) points will be deducted from the flight score for over-flying the end of the slot time for up to a maximum of ONE minute (60 seconds).
- (d) A zero score will be recorded for over-flying the end of the one minute penalty time.
- (e) An extra 50 points will be added to the flight time core if, after landing, any part of the model (provided that part has not become detached from the model) comes to rest within the designated landing area, provided the model lands before the completion of the slot time.

#### **7.5.12 Slot Scoring**

- (a) The competitor who achieves the highest aggregate of points, i.e. flight points less penalty points, will be awarded a corrected score of one thousand points for that slot.
- (b) The remaining competitors in that slot will be awarded a percentage of the slot winners total score calculated from their own total score, i.e. The Competitor's own

score times 1,000 divided by the highest points total in the slot.

$$\text{Competitor's Slot Score} = \frac{\text{Competitor's Points} \times 1000}{\text{Slot Winner's Points}}$$

The slot score is rounded down to the nearest whole number

### **7.5.13 Final Classification**

- (a) At the completion of ALL rounds the competitors with the highest totals of percentaged scores must perform in a Fly-off (the CD to decide the number of competitors in the fly-off), to produce the final competition placings by one of the following methods:-
  - (i) Two further slots whereby all finalists compete simultaneously against each other twice.
  - (ii) Three further slots whereby all finalists will compete against each other at least once.
- (b) In the event of a fixed frequency clash in qualifying for the fly-off, the competitor with the lowest total score unable to change frequency must drop out in favour of the next competitor.
- (c) The fly-off differs from the initial rounds in no other way other than the slot time being increased to 12 minutes and an audible warning being given at 10 minutes.

## **7.6.1 F3F SOARING LEAGUE and TEAM SELECTION GUIDELINES**

### **7.6.1.1 Purpose**

- (a) The aim of the F3F Soaring League is to encourage participation in F3F contests and to provide a league structure, consisting of high quality contests for F3F enthusiasts.
- (b) To provide a sound reliable basis for the selection of pilots to represent the UK at FAI World and European Championships.

### **7.6.1.2 League Contests ( General )**

Reference to League below should also be understood to mean the BMFA UK F3F Team Selection League.

- (a) F3F Racing Class is governed by rules contained within Volume F3 of the FAI Sporting Code. These additional notes are guidelines considered to be best practice for the organisation of the BMFA F3F Slope Racing League.
- (b) The BMFA F3F League is executed under the remit of the Silent Flight Technical Committee (SFTC), who from time to time may delegate responsibility for the running of the League to an individual League Coordinator, Group of Coordinators, or BMFA Specialist Body as applicable. In the event that a Group is accountable, one person will be delegated to act as liaison to the SFTC and will be known as the BMFA F3F League Coordinator.
- (c) The league will be run annually, typically starting in April and ending in October. The final classification of competitors will be determined at the end of the Season
- (d) Team Selection will be achieved from the results of the final league scores. See section 7.6.1.7 UK F3F Team Selection
- (e) An equal number of Competitions to be scheduled in the North and the South of the UK subject to the availability of suitable sites.
- (f) The Southern Boundary of Yorkshire and Lancashire will be the dividing line for determining the classification of a Northern or Southern Competition. All areas to the North of this boundary will be classed as Northern, whilst all areas to the South of this boundary will be classed as Southern.
- (g) National Competitions will be those run on a centralised basis and may include the BMFA F3F Nationals, BARCS F3F Open or any other F3F Open Competitions as designated by the League Coordinator, but excluding Eurotour and World Cup events.

### **7.6.1.3 Contest Entry**

- (a) Competitors will pre-enter the contests by 10pm on the Wednesday evening before the Competition. Registration will open approximately 2 weeks prior to this date. The basic details of the contest must be notified on the BMFA website or in the BMFA News at least one month before the contest.
- (b) Pre-entry details must include:
  - (i) Pilots Name
  - (ii) Frequency to be used ( A minimum of two legal frequencies in the case of 35mHz )
  - (iii) BMFA Membership Number or proof of acceptable insurance cover.
- (c) Entry Fee to be paid on the morning of the Competition.

- (d) Entry to BMFA F3F Team Selection League events is open to all BMFA members. For non BMFA members refer to General Rule 2.1.6 (d) and (e).
- (e) Entry will be free to Junior Competitors

#### **7.6.1.4 Definition of a League Contest**

A Contest qualifies for inclusion in the league Scoring System if it satisfies the following requirements :-

- (a) A minimum of Four rounds have been completed for League and National Contests.  
(See FAI rule 5.F.13 for discards)
- (b) A Minimum of Ten Competitors must start the Contest.
- (c) The Contest is flown to the current FAI F3F Rules (Local Rules / Conditions Permitting).
- (d) A Competitor, regardless of their location, may choose to enter any League Contest in either the Northern or Southern Venue
- (e) Northern and Southern Competitions should not be scheduled for the same weekend. Exception will only be allowed where the availability of dates or venues prevent such an arrangement.
- (f) A multi-day Competition is one scheduled to last more than one day, and have the clear aim to fly as many rounds as practicable. However to be valid for inclusion in the Final League results, not less than Four rounds must be completed over the number of days allocated for the competition
- (g) Radios operating on the 2.4GHz band are allowed but no information from the model to the transmitter is permitted except receiver battery state and signal strength.
- (h) Models must be controlled solely by the competitor from the ground. The use of any on-board devices such as gyroscopes are expressly forbidden. Competitors found using such equipment will be immediately banned from the competition.

#### **7.6.1.5 League Contest Schedule**

- (a) A Competitors final League Score will be determined by, adding up the 'normalised' scores achieved in completed League and National Contests.
- (b) A minimum of three and a maximum of four League Contests to be scheduled in both the North and the South. In addition, a minimum of one and a maximum of four National Contests to be scheduled at the start of the year, all as described in 7.9.3.1.2.
- (c) Up to two Reserve dates should be set for both North and South Competitions. Where two dates are specified, then one date to be at approximately the mid point of the season. In addition, provision for a reserve date for the BMFA F3F Nationals must be included in the calendar.
- (d) All League Contest Schedules to be carried out by the League Co-ordinator(s) as referred to in 7.9.3.1.2 , to ensure that where possible, all venues and dates are declared before the start of the season. For any contest added later, then at least six weeks notice must be given by the League Co-ordinator stating, the venue and date of the contest for it to be valid for inclusion in the final league results.
- (e) A Competitors final League Results will be determined as follows :-

#### Total Number of League or National Contests Completed

Eight to Nine  
Six or Seven  
Four or Five  
Three or fewer

Best Five to Count  
Best Four to count  
Best Three to count  
All Results to count

#### 7.6.1.6 League Scoring

- (a) Only Completed Rounds will be scored
- (b) League Results

The Competitor with the Highest Score in each Contest is assigned 1000 points. The results for all other Competitors in that league contest are calculated or 'normalised' using the formula :-

$$\text{Competitor's Result} = \frac{\text{Competitor's Contest Score}}{\text{Contest Winner's Score}} \times 1000$$

#### 7.6.1.7 UK F3F Team Selection

- (a) The Top Three pilots from the BMFA F3F League will be invited to form the UK F3F Senior Team and be recommended to the BMFA SFTC for acceptance. In the event that one of those pilots is unable to accept the invitation, then the pilot with next highest League points will be offered a team position. This process is repeated as necessary in order to fill the places available.
- (b) The Top Three Junior pilots from the BMFA F3F League will be invited to form the UK F3F Junior Team and be recommended to the BMFA SFTC for acceptance. In the event that one of those pilots is unable to accept the invitation, then the pilot with next highest League points will be offered a team position. This process is repeated as necessary in order to fill the places available.
- (c) Pilot selection to form the UK Team will be limited to only those Pilots who's 'normalised' score for the League is within 90% of the League winners score. In the event that insufficient pilots meet the criteria, then no UK Team will be recommended.

#### 7.6.1.8 Suitability of Flying Sites

A contest should only be scheduled at a slope where model flying and Frequency Control is under the full control of the Hosting Organisation and undertaken with the full permission and knowledge of the Land Owners where applicable. At least one member of the Hosting Organisation must be present to advise on selection of suitable slope, liaison with the local flyers, local rules and any problems arising throughout the race. Special attention must be given to the following points:-

- (a) National Coverage
- (b) A variety of flying conditions at different contest venues
- (c) Areas that can offer strong consistent conditions and the greatest options for various wind directions
- (d) Suitability for locating the bases 100m apart plus offering a clear view of the expected flight line
- (e) Local Rules

Note – Placing the competition course to allow the racing flight to be achieved in an area of maximum compression or the 'accepted' safe racing line if prior knowledge of the slope and racing at the venue is established. If possible the turn judges and their

sighting devices should be set back a reasonable distance from the racing line but always in a manner where they can reasonably be expected to witness the whole flight of the model. However the pilot always carries the responsibility of presenting the model to the turn judges in order for them to acknowledge the turn or entry/exit to/from the course.

#### **7.6.1.9 Safety**

The use of a safety 'line' is noted in the full FAI Rules. However in addition to this, a safety 'area' must be established a suitable distance away from the flight line. This safety area should be further extended to form a 5 to 6m wide corridor to extend from immediately behind the pilot, and perpendicular to the flight line, out beyond the pits. All competitors and spectators must remain outside these safety areas until being called to fly. Pit areas should be located to one side or the other of this extended corridor.

- (a) A pilot who flies his model over the safety area whilst racing or encroaching the safety area at any time will be penalised 100 points.
- (b) A pilot whose model comes to rest within the safety area will be penalised by a zero score for that round.
- (c) NOTE. All penalties will be deducted from the competitor's final score and will be noted on the score sheet of the round in which the penalty applies.

#### **7.6.1.10 Timetable**

Briefing – 9:15am

Start of First Round – As soon as possible following Briefing

Completion – As follows:-

If the Competition has not started by 12:30pm, then the contest will be cancelled, unless the CD believes that a League Result (Four Rounds for League contests, and two day National contests) can be obtained in the remaining time

#### **7.6.1.11 Contest Progress**

- (a) Pilots must clear the course as soon as possible after completing their contest flight, unless they have the CD's express permission to do otherwise.
- (b) Any pilot allowing their model to re-enter the course without the CD's express permission will be penalised 100 points
- (c) Any pilot flying his model in an area or manner which is considered by the CD to impede a following Competitor, will be penalised 100 points
- (d) Pilots must land their models as soon as possible after completion of their contest flight. Prolonged periods of aerobatics, model trimming, high energy passes, dynamic soaring or similar whilst preparing to land, will in the first instance incur a warning from the CD. In each case any further infringements will incur a 100 point penalty.
- (e) Interruptions to the Competition, caused by the weather, will start a 30minute delay timer immediately the CD decides conditions are unsuitable for flying. The 30 minute timer will only stop when the CD considers the conditions are suitable to proceed, and the next Pilot is called to the 'ready box'.

#### **7.6.1.12 Protests**

- (a) Any decision made by the CD may be protested in writing as soon as is reasonably practicable after the decision, but no later than the end of the round.

The protest is to be handed to the CD along with a fee of twice the entry fee which will be returned if the protest is upheld. The CD will pass the protest on to the Jury.

- (b) A jury will be nominated by the CD at the start of the contest. The jury members will be competitors of that contest. If one of the Jury is directly involved in the protest, then he will stand down from the Jury while the protest is being considered.
- (c) If the protest is dismissed by the Jury, the protester retains the right to take the protest direct to BMFA Council through the BMFA Competition Secretary. For details of the procedure see General Rules, Section 2, Rule 2.2.13 which is repeated as Silent Flight General Rule 7.2.11 in this rule book.

## **7.6.2 SIXTY INCH R/C SLOPE PYLON RACING**

### **7.6.2.1 Objective**

To provide a slope racing class suitable for open events.

### **7.6.2.2 Models**

- (a) Models shall have a maximum wingspan of 60 inches (1524 mm).
- (b) In all other respects they shall conform to FAI specifications (i.e. 7.5 mm nose radius, maximum wing loading 75 gms / dm<sup>2</sup>). Change of wingspan during flight is not allowed and all ballast must be securely fixed.

### **7.6.2.3 Frequencies**

Pilots will provide two frequencies, preferably three, and must be prepared to change frequency at the request of the CD. In the event of a clash of frequencies beyond the qualifying rounds the person with the highest number of points from the qualifying rounds will be given preference in choosing frequencies.

### **7.6.2.4 The Course**

- (a) The course will be 80 metres in length, substantially parallel to the edge of the slope with pairs of sighting poles set at 90° to the line of the course used to define the turn lines.
- (b) The pylons at the turn points will be designated Base A and Base B.
- (c) One lap consists of two legs, Base A to Base B and back.

### **7.6.2.5 Competitors, Helpers and Officials**

- (a) Pilots shall stand behind Base A.
- (b) Flag men (one for each pilot in the race) will stand behind Base B.
- (c) If manual calling is used (7.28.6.1), callers will stand with their pilots.
- (d) If radio calling is used (7.28.6.2) , marshals (one for each pilot in the race) will stand behind Base A.

### **7.6.2.6 Identification and Signalling**

#### **7.6.2.6.1 Manual Calling**

- (a) Each pilot will have a caller. Callers will tell the pilots when the Base B flag for their model is raised and call out the number of laps.

- (b) Each model in a race will be allocated a colour code and will be identified to its appropriate flag man at base B before the launch phase commences.
- (c) Signalling of turns at Base B will be by the raising of the appropriate coloured flag as the model passes Base B from Base A in the direction of leaving the course.
- (d) Pilots will judge their own turns at base A.
- (e) Callers will inform pilots of any cuts.

#### **7.6.2.6.2 Radio Calling**

Subject to suitable radio equipment being available, the CD may require that the following calling system is used.

- (a) Each pilot will wear a hard hat equipped with a head mounted transceiver (supplied by the race organisers). Pilot's will not have a caller.
- (b) Each model in a race will be allocated a colour code and will be identified to its appropriate flag man at base B before the launch phase commences. Each flag man shall be equipped with a transceiver on the same frequency as the pilot and shall confirm recognition of the model verbally via the headset. The pilot shall confirm to the CD that the identification procedure is complete.
- (c) Signalling of turns at Base B will be by the flagman pressing the tone button of his transceiver as the model passes Base B from Base A in the direction of leaving the course. If the model cuts the turn, the flag man shall immediately;
  - (i) raise his flag and keep it raised until the turn has been completed correctly
  - (ii) transmit the word 'cut' using his transceiver

No other communication between the pilot and the flag man is allowed.

- (d) Pilots will judge their own turns at base A.
- (e) Marshals at Base A will inform the pilots of any cuts there by raising the appropriate flag and keeping it raised until the turn has been completed correctly. They will also call out the number of laps completed.

#### **7.6.2.7 Launching and Start**

- (a) The pilot or a helper may launch the model.
- (b) Launching will occur only in the launch period which will last for thirty seconds. Thirty seconds advanced warning of this launch period shall be given with a countdown being given at five second intervals (i.e. 30, 25, 20, ..... launch)
- (c) At the end of the launch period ten seconds will elapse before the start of the race. A verbal countdown will be given from ten down to zero at one second intervals.
- (d) On the call of zero the marshals at Base A start their watches and the race starts.
- (e) Any glider that enters the course towards base B from Base A before zero will be flagged by the marshal at Base A and must be made to leave the course and re-enter and the flag shall be kept raised until the model has started correctly. The CD shall inform pilots if they have started falsely.

#### **7.6.2.8 Timing**

- (a) During the qualifying rounds, the flight time of each model shall be timed by the appropriate marshal at Base A.
- (b) Any model hitting the sighting apparatus shall receive a 'did not finish' classification for that race.

### **7.6.2.9 Qualifying Rounds**

- (a) At least two qualifying rounds shall be flown. They shall be preferably four but at least three pilots in each heat. Qualifying rounds shall be ten laps (20 legs)
- (b) If three or more qualifying rounds are flown then the worse round result of each pilot shall be discarded.
- (c) The heat matrix will be arranged so that there is as much variety of pilot combinations and as few instances of pilots flying against each other more than once as possible.
- (d) Points will be allocated as follows:
  - First place - 1,000 points
  - Other places -  $\frac{\text{First place time}}{\text{Other place time}} \times 1,000$  points
  - Did not finish - 0 points

### **7.6.2.10 Finals**

The top eight pilots from the qualifying rounds will compete in A and B finals as follows;  
B Final - 5th, 6th, 7th and 8th placed qualifiers  
A Final - 1st, 2nd, 3rd and 4th placed qualifiers  
Finals will be fifteen laps (30 legs)

### **7.6.2.11 Reflights**

- (a) A reflight shall be granted if a pilot is miss-signalled during a race. During the qualifying rounds such a refly will be fitted into the race matrix at the most convenient point but if this is not possible then the original race must be reflowed.
- (b) If this is the case then the result of the reflowed race will be used to calculate the score of the pilot granted the reflight. The better of their two results will be used for the other pilots' scores.
- (c) Miss-signalling during the finals shall result in the race being abandoned and restarted.
- (d) A mid-air collision is not grounds for a reflight.

### **7.6.2.12 Safety**

- (a) Safety areas and local safety rules will be defined by the CD on the day.
- (b) All personnel situated in areas close to the flightpath of the models must wear hard hats (i.e. pilots, callers, flagmen, officials etc.).

## **7.6.3 CLUBMAN'S SIXTY INCH R/C SLOPE RACING**

### **7.6.3.1 Objective**

To provide a slope racing class based Sixty Inch Slope Racing but simplified and suitable for club events.

### **7.6.3.2 Models**

As Sixty Inch R/C Slope Racing ( 7.6.2 Models)

### **7.6.3.3 Frequencies**

Pilots will provide at least two frequencies and must be prepared to change frequency at the request of the CD.

### **7.6.3.4 The Course**

As Sixty Inch R/C Slope Racing ( 7.28.4 The Course)

### **7.6.3.5 Competitors, Helpers and Officials**

- (a) Pilots shall stand behind Base A.
- (b) Each pilot will have a caller. Callers will tell the pilots when the Base B flag for their model is raised and call out the number of laps.
- (c) Flag men will stand behind Base B.

### **7.6.3.6 Identification and Signalling**

As Sixty Inch R/C Slope Racing ( 7.28.6.2 Manual Calling)

### **7.6.3.7 Launching and Start**

- (a) Pilots or their helper/caller may launch the model.
- (b) Launching will occur in the launch period which will last for thirty seconds. The Contest Director (CD) will count the period upwards in ten second intervals (i.e. 10, 20, 30)
- (c) At the end of the launch period thirty seconds of height gain period will commence. The CD will count down this period in ten second intervals for twenty seconds and one second intervals for the final ten seconds (i.e. 20, 10, 9, 8, etc.).
- (d) When the height gain period ends, the race starts.
- (e) Any glider that enters the course towards base B from Base A before zero must be made to leave the course and re-enter. The CD shall inform pilots if they have started falsely.

### **7.6.3.8 Heats and Finals**

- (a) The CD will endeavour to run as many four man heats as possible. If it is not possible to run four man heats, three man heats will be matrixed.
- (b) Heats will be arranged so that there is as much variety of pilot combinations and as few instances of pilots flying against each other more than once as possible.
- (c) Points will be allocated as follows:
  - Firs - One point      Second - Two points      Third - Three points
  - Fourth - Four points      No finish - Five points
- (d) After a minimum of two rounds of qualifying a seeding list may be generated. Lowest scores are given the highest positions.
- (e) the seeding list will generate the personnel taking part in the finals. Positions in the finals will be allocated as follows:
  - 1 to 4    A Final      5 to 8    B Final      9 to 12    C Final    etc.
- (f) Finals will be flown in reverse order, finishing with the A Final.
- (g) Heats will be ten laps and finals will be fifteen laps. One lap consists of two legs, Base A to Base B and back.

### **7.6.3.9 Safety**

As Sixty Inch R/C Slope Racing (7.6.12 Safety)

## **7.6.4 SIXTY INCH EPP R/C SLOPE PYLON RACING**

### **7.6.4.1 Objective**

To provide a slope racing class using models with 'soft' EPP foam construction airframes and based on the original Sixty Inch Slope Racing concept.

### **7.6.4.2 Definitions**

- (a) Centre Section  
the portion of the wing extending up to 3 inches either side of the centre-line.
- (b) D-Box  
the portion of a wing panel from the extreme leading edge to the 25% chord line.
- (c) EPP  
any foam which returns to its previous state following a moderate deformation. Note: at the time of writing this only includes genuine EPP foam but the definition may change as new materials become available.
- (d) Deformable Foam  
foams which deform on impact (not necessarily resiliently) examples: blue or white foam, EPP or similar man-made material.
- (e) Soft Covering  
Flexible covering material which can be deformed but will return to its original shape without damage or permanent deformation. e.g. Heatshrink film, cross weave tape, vinyl tape. The following are not included: ply, balsa, plasticard, mylar, epoxy and polyester resins, varnishes, PVA (or similar) soaked paper.
- (f) Flexible Adhesive  
any adhesive tape, spray or paint which dries to a flexible state. Examples: double-sided tape, 3M 77, Spraymount, Copydex. The following are \*not\* included: epoxy and polyester resins, varnishes.
- (g) Secondary Flying Surface  
flying surface other than the wing. e.g. fin, tailplane, canard.

### **7.6.4.3 Model Specifications**

#### **7.6.4.3.1 General**

Models shall have a maximum wingspan of 60 inches (1524 mm).

#### **7.6.4.3.2 Wing Structure**

- (a) Any material may be used in the Centre Section (note the EPP nose rule (7.6.4.2.(c)) must be observed for flying wings).
- (b) The D-Box of each wing panel must be constructed from EPP except at Centre Section, Spars and Ballast (subject to 7.6.4.3.5). No local reinforcement of the leading edge is permitted.

- (c) The portion of the wing between the D-Box and the trailing edge or false trailing edge must be constructed from Deformable Foam except at the Centre Section and the Spars.
- (d) Spars: no restrictions.
- (e) Control surfaces: no restrictions.
- (f) The entire structure may be covered using a Soft Covering only and bonded using a Soft Adhesive only. No other materials may be used to sheath the structure.

#### **7.6.4.3.3 Fuselage**

- (a) A 'cladding section' is defined for the fuselage. All exposed areas within the cladding section must be clad using EPP, to a minimum thickness of 1/4 inch at every point, except in the area of the Longerons (7.6.4.3.3.(b)). The cladding section extends from the nose to 5 inches forward of the rear of the fuselage. For models with tail surfaces, the rear of the fuselage is taken as the location of the leading edge of the rear-most tail surface.

Example 1: On a model with tailplane and fin, with the fin behind the tailplane, the cladding must extend from the nose to five inches forward of the leading edge of the fin.

Example 2: On a model with a fin supported by a short boom, and no tailplane. If the section of boom between the wing and the leading edge of the fin is less than 5 inches, the boom does not require any EPP cladding at all.

- (b) Longerons are permitted for stiffening the fuselage. They may be embedded in the outer EPP layer but must not protrude beyond the outer surface. Longerons may be used to support local strengthening members e.g. ballast- and wing-mounting plates. They must be regular (e.g. square, round) in section. For safety reasons the forward end of each longeron must be located at least 2 1/2 inches from the nose of the model.
- (c) The section of the fuselage from the tip of the nose to 1.5 inches back must be solid EPP.
- (d) External reinforcement is permitted for wing and tailplane fixing e.g. to provide support for wing dowels.
- (e) The entire structure may be covered in a Soft Covering only, bonded using a Soft Adhesive only. No other materials may be used for covering.

#### **7.6.4.3.4 Secondary flying surfaces.**

- (a) The following materials are permitted in the construction of the secondary surface: balsa, correx, deformable foam. No other material may be used in the structure except for local reinforcement.
- (b) Soft Coverings may be used, bonded using a Soft Adhesive.
- (c) Control surfaces: as 7.6.4.3.2.(b).

#### **7.6.4.3.5 Ballast**

Ballast and balance weight must be mounted internally. If mounted in the wing, no part of the ballast or enclosing tube may lie forward of the 15% or 1.5 inch chord line, whichever is the lesser. Note: the pilot is responsible for ensuring that any ballast carried is within the structural limits of the model.

#### **7.6.4.4 The Course**

- (a) The recommended length of the course shall be 70 m. 10 laps (20 legs) shall be flown to give a total race distance of 1400 m.
- (b) The length of the course may be varied at the CD's discretion, with the agreement of the competitors. If the course length is changed, the CD may also optionally alter the number of laps flown to restore the total distance travelled to 1400 m.

#### **7.6.4.5 Flying Rules**

##### **7.6.4.5.1 Launching**

- (a) The CD shall call out the start of the thirty second launch period, during which time the models may be launched and the pilots attempt to gain height.
- (b) A countdown will be given during the launch period at ten second intervals for the first twenty seconds, and at one second intervals for the last ten seconds.
- (c) Relaunches are not allowed after the end of the launch period.
- (d) After thirty seconds have elapsed and not before, the models may cross Base A in the direction of Base B to start the race.

##### **7.6.4.5.2 Penalties**

- (a) A zero score shall be given to any pilot colliding with another model as a result of deliberate intent. A second infringement will result in disqualification.
- (b) The CD shall establish a safety line and announce it at the pilot's meeting. This line will generally be a straight line between the front pole of bases A and B, but can be altered by the CD to suit local conditions and announced at the pilots meeting.
- (c) A pilot crossing the safety line between the bases will be issued one warning per each race. Any pilot crossing the line twice in the same race will be awarded a zero for that race and instructed to land immediately.
- (d) Any pilot crossing bases A or B behind the safety line will be immediately awarded a zero for that race and asked to land immediately.

##### **7.6.4.5.3 Scoring**

In each event, the pilot's overall score is decided partly by the heats and partly by a knockout-tournament.

##### **7.6.4.5.4 Heats**

- (a) The winner in each heat gets N points for a first, N-1 for a second, N-2 for a third and so on, where  $N = (\text{max number of flyers per heat})$ . For example, if the heats are run with a maximum of four flyers, the winner of each heat receives four points, irrespective of whether two, three or four flyers compete in that particular heat.
- (b) Failure to finish receives a zero.
- (c) At the end of the heats, the scores of each pilot are added, and the flyer with the most points is awarded 50 league points, second place gets 49, third gets 48 and so on.

#### **7.6.4.6 Knockout Tournament**

- (a) The knockout tournament is also worth 50 points, and is seeded on the basis of the heats so that the top flyers in the heats do not meet until the final.
- (b) The maximum league points per event is therefore 100 points for winning both the heats and the final.

- (c) In each race of the tournament one pilot from a race of two, two pilots from a race of three or two pilots from a race of four advance to the next round.
- (d) If the required number of aircraft for advancement do not finish the race, advancement to the next round will be awarded to the aircraft that travels the furthest distance on the course but did not complete the course.
- (e) In the final race of the tournament, finishing position will be awarded to any aircraft not completing the course by total distance travelled on the course.
- (f) The first round of the tournament will consist of 10 laps and in each subsequent round of the tournament the laps will be increased by 5 to a maximum of 25.
- (g) An alternative method of running the tournament can be used if time or local conditions require it to be run quickly. This should ONLY be used if, in the CD's opinion, the full tournament can not be completed. Two pilots are selected by random draw and fly 10 laps as a two man heat. The winner of that race then flies the next pilot (selected by random draw). This continues through the entry list until all pilots have raced. The losing pilot from each race is eliminated from the tournament. All races are 10 laps and the winner of the race involving the final pilot from the entry list is the tournament winner. Finishing order and points are awarded based on when each pilot is eliminated (based on 50 points maximum and reducing by one full point for each finishing position).
- (h) If the tournament must be abandoned for any reason prior to the launching of aircraft in the final race, finishing order for the event will be determined by the results of the heats only and scores will be based on doubling the heat score (based on 50 points maximum) to the standard 100 maximum for the event.

### **7.6.5 UK 60" EPP SOARING LEAGUE**

- (a) The league shall be conducted on a calendar year basis and consist of at least three scheduled events on at least two different venues.
- (b) At least 2 events must be flown and counted to have a league in any calendar year.
- (c) League standing shall be the total points scored in each league event minus a set number of discards.
- (d) Depending on the number of events flown in a calendar year, each pilot will be able to discard their lowest score(s). Scores counted towards the league shall be: two from three, three from four, four from five, four from six, five from seven, six from eight.

## **7.7 THERMAL STAND OFF SCALE GLIDER**

### **7.7.1 Object**

To provide the opportunity for equitable competition between Scale Model Gliders flown on flat sites.

### **7.7.2 Procedure**

- (a) The competition will be in two parts, static and flying.
- (b) Marks for both static and flying will be awarded from 0 to 10 and will then be multiplied by the appropriate M factor.
- (c) Entrants will supply the following items:
  - (i) A signed declaration of the origin of the model stating which category in section 7.7.3.(b) is appropriate.
  - (ii) A three view drawing with dimensions.
  - (iii) Colour photographs or other means of identifying accuracy of colour, markings and appearance.
- (d) Entrants may not discuss details of their models with the judges. Judges are instructed to disregard all but the information submitted in written form under section 7.7.2.(c).
- (e) Models will be viewed from outside a circle of 15 ft. radius during static judging. Cockpit or interior cabin detail will not be taken into consideration, except as it affects the accuracy of outline.

### **7.7.3 Static Judging**

- (a) The model will be marked for:
  - (i) Accuracy of outline..... M = 7
  - (ii) Complexity of structure ..... M = 5
  - (iii) Finish, colour and markings ..... M = 6
  - (iv) Craftsmanship..... M = 5
- (b) The above marks awarded will then be subject to multiplication by a 'K' factor to reflect the entrant's involvement in its construction.
  - (i) Ready made..... K = 0.5
  - (ii) Built substantially from a ready made kit ..... K = 0.8
  - (iii) Built from a kit of parts but with a substantial  
amount of work by the entrant..... K = 0.85
  - (iv) Built from scratch from other persons plans ..... K = 0.9
  - (v) Built from scratch from own design..... K = 1.0
- (c) The maximum score from the static section is 230

### **7.7.4 Flying Section**

- (a) Launching may be carried out by hand tow, power winch or aero-tow as decided by the Contest Director and, preferably, published with the notification of the event.
- (b) The competitor will make two flights in which he will attempt to accumulate a total time of 8 minutes. The 8 minutes may be scored on one flight or the accumulation of two flights with no penalty for overflying.
- (c) The competitor will be awarded one point for every two seconds flown. The maximum number of marks is 240.

- (d) During the two flights the following manoeuvres will be scored by the judges:
- (i) Take off (ROG or hand launch)(both flights)..... M = 2
  - (ii) Option 1 ..... M = 4
  - (iii) Option 2 ..... M = 4
  - (iv) Option 3 ..... M = 4
  - (v) Approach and landing (both flights) ..... M = 2
- Options may be any recognised manoeuvre appropriate to the type, acceptable to the judges and nominated to them beforehand. The options are performed only once but may be attempted at any time during the two flights.
- The maximum number of points from the manoeuvres section is 200.
- (e) A repeat flight attempt will be permitted only in the case of towline breakage or if the flight was not judged or timed through the fault of the judges/time-keepers.

### 7.7.5 Scoring

- (a) The competitor's final score is the addition of all points achieved during the competition after the appropriate multiplication and correction factors have been applied.
- (b) Maximum possible marks from all sections is 670.
- (c) In the event of a tie the flying section is repeated.

### 7.7.6 Judges

Where possible at least two judges shall be used and preferably one of these should be from outside of the model field, i.e. full size glider pilot, etc..

## **7.8.1 POWER SCALE SOARING (PSS)**

### **7.8.1.1 Object**

To provide a competition for un-powered slope soaring models of aircraft originally powered by rocket, piston or jet engines.

### **7.8.1.2 Models**

Powered gliders are not permitted, otherwise there are no restrictions on the choice of original aircraft or the scale adopted.

### **7.8.1.3 Procedure**

- (a) The competition shall consist of a static section and a flying section. The static section shall be performed first
- (b) Two rounds of the flying section shall be flown.

### **7.8.1.4 Static Section**

- (a) Competitors shall supply the following items:
  - (i) A three view drawing of the original aircraft drawn to a scale not smaller than 1/72 scale (1 in. = 6 ft.).
  - (ii) Colour photographs or other means of identifying accuracy of colour, markings and form.
- (b) Competitors shall not discuss details of their models with the judges. Judges shall disregard any comments made by the competitors about the details of the models.
- (c) Static Judging.
  - (i) The model shall be judged from outside a circle of 10 metres diameter by two judges.
  - (ii) The competitor or an assistant shall be required to lift the model and display it in all three view axes for evaluation by the judges.
  - (iii) The judges shall compare the information provided (as in 7.8.4.(a).(1 and 2) above) with the model.
- (d) Scores in the static section shall be awarded as follows:
  - (i) Accuracy of outline..... 80
  - (ii) Accuracy of form (i.e. correct shape of compound curves)..... 60
  - (iii) Accuracy of colour and markings..... 30
  - (iv) Accuracy of detail..... 20
  - (v) Accuracy of finish..... 10
- (e) The total aggregate score from 7.8.4.(d).(1 to 5) shall be factored by a 'K' factor to reflect the competitor's involvement in the construction of the model.
  - (i) Ready made..... K = 0.5
  - (ii) Built substantially from a ready made kit ..... K = 0.8
  - (iii) Built from a kit of parts but with a substantial amount  
of work done by the competitor ..... K = 0.85
  - (iv) Built from scratch from another person's plans..... K = 0.9
  - (v) Built from scratch from own plans..... K = 1.0
- (f) The maximum score in the static section is 200.

#### 7.8.1.5

#### Flying Section

- (a) Each flight shall be of between 4 and 6 minutes duration. The flight time shall start when the model is hand launched and shall stop when the model comes to rest during the official landing manoeuvre. A 20 point penalty shall be awarded if the total flight time is either less than 4 minutes or greater than 6 minutes.
- (b) All parts of the model judged in the static section shall remain attached to the model during the flying section. Transparent or translucent fairings may be added to the air intakes of models of jet powered or ducted fan aircraft.
- (c) Re-launching is allowed but the flight time will not be counted during the non-airborne periods.
- (d) Four nominated manoeuvres shall be performed in each flight. The manoeuvres shall be presented in front of the judges and performed cross-wind to obtain a high score. The choice of manoeuvres and the manner in which the manoeuvres are performed shall be representative of the flying characteristics of the original aircraft. The manoeuvres shall be nominated before the start of the flight and may be performed in any order. The start of the manoeuvre shall be signalled by the competitor or a helper.
- (e) The manoeuvres shall be judged by two judges. Each manoeuvre shall score a maximum of 10 points. The nominated manoeuvres shall be selected from the following list:
  - (i) Optional nominated manoeuvre
  - (ii) Stall turn to the right
  - (iii) Horizontal circle
  - (iv) Horizontal eight
  - (v) Inside loop
  - (vi) Chandelle
  - (vii) Axial roll
  - (viii) Five seconds inverted flight
  - (ix) Reversal
  - (x) Three turn spin
- (f) Each flight shall be terminated by with a landing which is to be judged. The contest director shall position the landing area in a safe position which need not be immediately adjacent to the flying area. If the landing area is not near to the flying area then a judge will be required to remain at the landing area to provide for the rapid progress of the competition. The landing manoeuvres shall be scored as follows:
  - (i) Square approach ..... maximum 6
  - (ii) Landing within a circle of 40 metres diameter.....20
  - (iii) Quality of final approach and touch down..... maximum 14
- (g) Smooth flying which demonstrates the flying characteristics of the original aircraft shall be judged for the periods of flight time between the manoeuvres. Points awarded for smooth presentation of flight..... maximum 20
- (h) The maximum score from each round of the flying section is 100 points.

#### 7.8.1.6

#### Scoring

- (a) The competitor's final score is the addition of all points achieved during the competition including the deduction of any penalty points.
- (b) The maximum possible score is 400 points.
- (c) If there is a tie for first place then one round of the flying section shall be repeated.

## **7.8.2 POWER SCALE SOARING (PSS) CLASS 2**

### **7.8.2.1 Object**

To provide a PSS event suitable for general club use. The points awarded by the judges during the three phases of the competition are arranged so that there is a bias of just over three to one in favour of flight performance over static marking.

### **7.8.2.2 Eligible Models**

Slope soaring models of full size piston, jet or rocket propelled aircraft, excluding powered gliders such as the Falke or Fournier.

### **7.8.2.3 Phase One - Static Judging**

Judging must be done from outside a circle of 20 ft radius with the model placed at its centre. The competitor may be required to present various views of the model to the judges.

The documentation required will be a three view of the type modelled, no smaller than six inches square, plus two colour photographs, magazine pictures or similar showing the colour scheme of the actual aircraft modelled.

The maximum number of points awarded by the judges will be as follows:

|                              |    |
|------------------------------|----|
| Scale fidelity .....         | 20 |
| Colour scheme .....          | 20 |
| Workmanship and finish ..... | 20 |

### **7.8.2.4 Phase Two - Nominated Flight**

This flight will consist of three compulsory and two nominated manoeuvres plus a judged approach and landing

The maximum number of points awarded by the judges will be as follows:

|                                                     |    |
|-----------------------------------------------------|----|
| Horizontal 360° turn.....                           | 20 |
| Horizontal figure eight (parallel to slope).....    | 20 |
| Straight and level flight (parallel to slope) ..... | 20 |
| Nominated manoeuvre (1).....                        | 20 |
| Nominated manoeuvre (2).....                        | 20 |
| Square approach and landing .....                   | 20 |

The two nominated manoeuvres must be applicable to the type modelled.

After the completion of the manoeuvres the competitor will have three minutes to land. Failure to land within this time will result in approach and landing marks being forfeited.

### **7.8.2.5 Phase Three - Free Style Flight**

The competitor will perform a 'free style' flight of not more than five minutes, the flight patterns and manoeuvres to simulate the performance of the full size aircraft modelled.

If the model is still flying at the end of the five minutes, the judges flight marking will terminate and the pilot will be asked to land. On the competitor calling 'landing' the approach and landing will be marked as normal. If the competitor has not landed within three minutes of being requested to do so, all approach and landing marks will be forfeited.

Manoeuvres must be clearly nominated to the judges, naming the manoeuvre and indicating its start and finish.

The maximum number of points awarded by the judges will be as follows:

|                                   |    |
|-----------------------------------|----|
| Scale flight .....                | 40 |
| Continuity .....                  | 20 |
| Square approach and landing ..... | 25 |

#### **7.8.2.6 Final Classification**

- (a) The model with the highest aggregate of marks is the winner
- (b) In the case of a tie, a further phase three (free style) flight will be made.
- (c) In all cases the judges decisions are final.

## **7.9.1 Hand Launched R/C Gliders - FAI Class F3K - UK RULES**

### **7.9.1.1 General**

- (a) The following rules are based on the FAI CIAM F3K class rules that are set out above.

The only significant changes, as UK local rules, is the addition of text sections dealing with the allowance of the usage of mini-bungees. Where such UK specific text is introduced it is marked within asterisk as \*thus\*.

- (b) These rules define a multitasking contest for F3K “hand launched” radio controlled gliders where a number of specific tasks shall be accomplished.
- (c) Each competitor is allowed one helper who may time and verbally assist but must not become involved in the flying task or in the handling of the model during the slot time \*other than for model release when the pilot is using a bungee. If the pilot they assist is using a bungee they may fetch the line and stretch the bungee\*.

Proxy launching is allowed but only under the circumstances as defined by the F3K rules.

#### **7.9.1.1.1 Frequency Control**

\*The organiser must provide a robust method for frequency control. This may be implemented in various ways such as: a transmitter impound, antennae impound or by prior frequency verification backed by continuous frequency monitoring.\*

#### **7.9.1.1.2 UK Rules Regarding Bungee Usage at UK F3K Contests**

- (a) \*As a UK local addition of the international F3K rules, specifically as a modification to rule 5.7.2.1, the use of a “mini bungee” for model launching is also permitted.
- (b) If a mini bungee is used, it must be supplied by the competitor and have the following characteristics:
- (c) A maximum un-stretched length of 20 metres of which a minimum of 15 metres must be of non stretching line.
- (d) A clearly visible pennant must be attached to the model end of the line
- (e) The bungee must be staked securely enough to withstand sustained tension. The stake should be positioned 5 metres upwind of the windward edge of the launching and landing area.
- (f) The maximum stretched length of the bungee at the point of launch shall not exceed 27 metres. Any competitor using a bungee shall also provide a 27 metre non elastic tape where one end is anchored by the bungee stake; the other end shows the maximum permissible stretch at launch. The maximum pull at a 27 metre stretch of the bungee shall not exceed 6 kg.
- (g) The bungee and 27 metre tape shall be reeled in by the competitor at the end of his/her slot unless the competitor, or someone else using this competitor’s bungee, are flying in the next slot\*

## **7.9.2 UK F3K Soaring League**

### **7.9.2.1 Purpose**

To encourage wider participation in F3K contests and provide a sound, fair and reliable basis for the selection of the UK F3K team for international contests.

Detailed information on contests dates, results, venues etc for the current year will be found on relevant web sites or via the BMFA web site links.

### **7.9.2.2 BMFA F3K League Events (General)**

- (a) The league will be run annually, typically starting in March and ending in October.
- (b) The BMFA F3K annual league will consist of at least six official F3K contests.
- (c) Entry to BMFA F3K league events is open to all BMFA, SAA, RAFMAA and RNMAA members.

Non-members of these organisations are permitted to enter the events and have their entry count for league points on payment of five times the standard entry fee and they must also produce evidence of valid insurance cover.

At the CD's discretion, non-members of these organisations are also permitted to enter the events on payment of the standard entry fee. They must produce evidence of valid insurance cover and their scores will not count towards league points.

- (d) BMFA F3K league events should attempt to use all of the officially defined FAI F3K tasks at each league event if time allows and is therefore possible. Over the course of a year's BMFA league calendar events, all of the official FAI F3K tasks must have been run at least twice.

### **7.9.2.3 Definition of a BMFA F3K League Contest**

A contest qualifies for inclusion in the league scoring system if it satisfies the following BMFA R/C Silent Flight Rules - Glider 56 Effective January 2009, requirements.

- (a) \*A minimum of four full contest rounds shall be completed\*.
- (b) \*A minimum of 8 competitors must start the contest\*.
- (c) The contest is flown to the current FAI F3K rules as defined in the current BMFA rules book.
- (d) In F3K contests only one entry is permitted per competitor. No competitor can submit multiple entries to secure more flights and hence an unfair advantage over others.
- (e) If time and weather permits, a flyoff will be held when a minimum of seven contest rounds have been fully completed and will be held at the end of any contest. A flyoff must consist of at least three full flyoff rounds in order to be valid in terms of BMFA league scoring and will consist of the top placed 10% of the contest entry field or the top placed 5 competitors, whichever is greater.
- (f) Each competitor is allowed to use up to five model gliders in the contest

### **7.9.2.4 Overseas Contests**

A competitor can submit up to two scores from overseas competitions if

- (a) The competition is flown to the current FAI F3K rules.
- (b) The competition meets the minimum BMFA requirements as defined above.
- (c) The competition results are published on a recognised F3K web site.

### **7.9.2.5 League contest event scoring**

- (a) Only completed league contests as above shall be scored.
- (b) A competitor's contest event score will be determined by the rules as defined in section 5.7.10.1 of the official FAI Rules.

- (c) A competitor's league event score is to be calculated as follows:  
The highest placed competitor, before any fly-off, is awarded 100 league points and the other league qualifier's scores use the formula:  
Competitor's league score = Competitor's event score/ Winner's event score x 100
- (d) \*In addition to a competitors' contest event score, if a valid fly off is held at a contest. Fly-off competitors will have extra points added to their pre fly-off scores as follows.  
The fly-off winner gains an extra 4 points, second 3 points, third 2 points, fourth 1 point and fifth 0.5 point. Thus a competitor coming fourth pre fly-off with a Percentage contest score of 98% who then wins the fly-off will increase his/her league score by 4 points giving a final total score for that league event of 102% points.\*  
If no flyoff is held at a contest event, then only the main contest event score will be used for each competitor

#### **7.9.2.6 Final BMFA F3K League annual results**

- (a) Final F3K BMFA annual league scores shall be determined by adding the scores achieved in the completed league contests qualifying for the final league results as shown below:
- |                       |   |                                       |
|-----------------------|---|---------------------------------------|
| Five or more contests | - | Best four results from such contests  |
| Four league contests  | - | Best three results from four contests |
| Three league contests | - | Best two results from three contests  |
| Two league contests   | - | Best two results from two contests    |
- (b) In the event that more than one competitor achieves the exact same total annual BMFA league score, then a system of countback shall be used to determine the final annual BMFA league placings, with the competitors 5<sup>th</sup> best contest scores being compared to determine who has the higher placing (and 6<sup>th</sup> best contest scores etc if necessary).

#### **7.9.2.7 Contest Entry**

- (a) Contest entry shall be by pre-entry, to be received by the Contest Organiser (CO) not later than Thursday in the week preceding the contest. Entries may be accepted after this date at the discretion of the CO and on the day if spaces are available in the matrix. The CO may delegate the collection of entries to the CD or an assistant.
- (b) Entry fees will be reimbursed to competitors if the CO receives cancellation of their pre-entry up to and including the Thursday in the week preceding the contest. The entry fee will not be reimbursed if the CO/CD receives cancellation after this day.
- (c) Entries received after Thursday preceding the event (including entries on the day) will incur double the normal entry fee.
- (d) Entry shall include the following information
- (i) The date and venue of the event
  - (ii) At least three (3) even frequencies (35 MHz – channels 60 to 90)
  - (iii) BMFA membership number (or equivalent). Proof of suitable insurance will be required before competitors are allowed to compete in the event.
  - (iv) Name, address and Telephone No. of each competitor.
  - (v) Payment for entry will be collected at the pilots' briefing before the start of the contest.

- (e) The basic details of the contest must be notified on the BMFA website or in the BMFA News at least one month before the contest.

### **7.9.3 UK F3K TEAM SELECTION**

- 7.9.3.1**
- (a) The pilots who achieve 1st, 2nd and 3rd places in the annual BMFA F3K League shall be recommended to the BMFA Silent Flight Technical Committee (SFTC) as the UK senior team for that year. Competitors placing 4th and below shall qualify, in order corresponding to their final classification, for senior team placing as reserves, 4<sup>th</sup> place being 1st reserve, 5th place being 2nd reserve etc., subject to (d) below.

- (b) Junior pilots who achieve 1st, 2nd and 3rd highest places in the annual BMFA F3K League shall be recommended to the BMFA Silent Flight Technical Committee (SFTC) as the UK junior team for that year. Junior competitors placing 4th and below shall qualify, in order corresponding to their final classification, for junior team placing as reserves, 4th place being 1st reserve, 5th place being 2nd reserve etc.

**Note** - The FAI considers a competitor to be a junior up to and including the calendar year (1st January - 31st December) in which they attain the age of 18 years.

- (c) For the purpose of team selection, juniors who attain the age of 18 during the team selection year shall be deemed a senior. This only applies when the team selection year precedes the Championship year
- (d) The team selection process shall be carried out each year even if there is no Championship scheduled for the following year. This is to ensure that official team(s) have been selected if a Championship is arranged at short notice. BMFA R/C Silent Flight Rules - Glider 58 Effective January 2007
- (e) \*Any pilot using a mini-bungee for launch (as per UK local rules) at any BMFA league contests will not be eligible for F3K team selection\*.

### **7.9.4 UK F3K SOARING LEAGUE GUIDELINES**

#### **7.9.4.1 Contest Schedule**

- (a) Briefing (unless otherwise advised) 9.45 am
- (b) Start of first round (unless otherwise advised) 10.00 am

#### **7.9.4.2 Contest Officials**

- (a) The Contest Organiser (CO) is the person nominated by the SFTC for the administration of BMFA UK F3K League.
- (b) The Contest Director (CD) is the person nominated by the CO to direct the contest. The CO may nominate themselves as CD. The CD may appoint assistants as required.
- (c) The CD will nominate a three man jury at the start of the contest. The jury may consist of pilots, officials or observers.

#### **7.9.4.3 Protests**

The protest procedure is as noted in the BMFA General Rules, Section 2, rule 2.2.13 and repeated in this rule book as General Rules for Silent Flight Contests, rule 7.2.11, with the following additions:

- (a) If one of the nominated jury members is directly involved in a specific protest then that person will stand down and a replacement juror will be nominated by the CD to act while that protest is being considered.
- (b) In consideration of the problems which would be caused to the running of the rounds of the contest, all protests should be passed to the CD in writing by the competitor within 30 minutes of the CD's decision being made. The protest must be accompanied by a fee of £10.00 which will be returned if the protest is upheld.

## 7.20.1 UK F5B ELECTRIC LEAGUES

### 7.20.1.1 Purpose

The leagues provide opportunity for competition in F5B (Open), and any starter leagues which the F5B flyers think can boost numbers.

Information on the Leagues, contest dates and results etc. can be obtained at [info@f5b.co.uk](mailto:info@f5b.co.uk), <http://www.f5b.co.uk> or via BMFA web site links

The rules for F5B open will be as per the FAI rules in that year with any UK variations as noted below.

Rules for the starter leagues will be based on the FAI rules in that year but with less restrictions on model size. Any UK variations will be noted on the website <http://www.f5b.co.uk>

### 7.20.1.2 Contest Entry

Entry to any league event is open to all BMFA, SAA, RAFMAA and RNMAA members. **Other non BMFA members should refer to General Rule 2.1.6 (d) and (e).**

Competitors may enter only one League class (Open/Starter League) per event

### 7.20.1.3 Definition of a League Event Qualifying for a Final League result

- (a) A minimum of 2 rounds shall be completed.
- (b) A minimum of 5 competitors shall start.
- (c) The contest shall be flown to current UK F5B rules.

### 7.20.1.4 Number of League Events Counting for Final League Score

|                 |                        |
|-----------------|------------------------|
| Starter League  | best 4 events to count |
| F5B Open League | best 6 events to count |

When less than 8 events are flown:-

|                  |       |                                |
|------------------|-------|--------------------------------|
| Starter League - | count | 3 from 6+ / 2 from 4 or 5      |
| F5B Open         | count | 5 from 7 / 4 from 6 / 3 from 5 |

### 7.20.1.5 League Scoring

- (a) Only completed rounds shall be scored. When more than two rounds are flown the one with the lowest score will be discarded.
- (b) The winning competitor will be given 100 points. Other competitors shall be given a score based on their own score expressed as a percentage of the winner's score:

$$\text{Competitor's score} = \frac{\text{Competitor's event score}}{\text{Event winner's score}} \times 100$$

- (c) Two models may be used in a single competition in each event category.

### 7.20.1.6 Organisation of an Event

- (a) Only completed rounds will be scored.
- (b) No test flying after the pilots briefing will take place without the CD's permission.
- (c) Briefing will be at 9.45 am.
- (d) Flying will start at 10.00 am.

- (e) The flying order for the day will be announced at the briefing and kept at base A.
- (f) The daily event order will be determined by the CD to maintain a schedule which suits charging / cooling / recharging.
- (g) Any competitor not ready to fly within five minutes of being called to the ready box will receive a zero score.
- (h) Any competitor who does not get a model airborne within two minutes of being requested to start will receive a zero score.
- (i) Any competitor crossing the safety line (excluding initial launch) will receive a zero score. CD will say at briefing if launching over the safety line will be permitted or not. If winds change significantly during the day then this may be revised.
- (j) A competitor who is allowed a reflight will be given time to cool, and recharge batteries.
- (k) The CD should arrange for flying to cease as close to 6.00 pm as possible

#### **7.20.1.7 Safety**

- (a) Competitors should fly safely at all times with regard to people and property.

### **7.20.2 UK F5B TEAM SELECTION**

#### **7.20.2.1**

- (a) All teams will be selected by means of the league system.
- (b) Selection for a World or European Championship team will be made in the year preceding the event.
- (c) The top three competitors in the F5B league at the end of the year will be recommended to the SFTC as the team members for the following year. If any of those qualifying do not wish to be a team member, the place or places will be offered to other competitors in order of league standing, i.e. 4th place in the league is 1st reserve for the team the following year.

## **7.21.1 UK Variations to F5J Rules**

(These rule variations are noted under their FAI F5J rule number).

### **7.21.1.1 (5.5.11.1.3) Characteristics of radio Controlled Gliders**

- (h) (ii) To restrict the operation of the motor by the competitor to a single continuous run not exceeding 30 seconds

Clarification: 1). This means that the AMRT may be set to allow motor re-start, providing that height limiting function is disabled or set to exceed 300m  
2) Motor re-start at any time gives zero score.

Additional safety notice: In this condition motors are 'live' during height reading and extreme care should be taken during this process. It is highly recommended that the model be held firmly in contact with the ground to prevent propeller rotation in the event of accidental motor operation during this process.

### **7.21.1.2 (5.5.11.3) The Flying Site**

Replace the whole clause with:-

- (a) The CD must establish a safe field layout that suits the space available for running the competition.
- (b) It is not necessary to establish either a Ready Box or a marked Safety Corridor.
- (c) A marked launch/landing spot for each competitor must be provided. These spots must be established with minimum 10m separation, preferably 15m, along a line approx at right angles to the prevailing wind.

### **7.21.1.3 (5.5.11.7) Cancellation of a flight and/or disqualification.**

Replace clause (e) with:-

- (e) the AMRT records no start height data, or indicates that a motor re-start has occurred.

### **7.21.1.4 (5.5.11.8.1) Rounds and Groups**

Replace last sentence of clause (a) with:-

A minimum of four (4) competitors should be scheduled for each flight group.

### **7.21.1.5 (5.5.11.13) Final Classification**

Replace clause (d) with:-

- (d) The CD may decide NOT to have a fly-off irrespective of entry numbers, provided this is announced prior to the competition starting.

## **7.21.2 UK F5J LEAGUE (2014)**

### **7.21.2.1 Introduction**

Information on the Leagues, individual contest dates and results etc. can be obtained at [www.eSoaring.net](http://www.eSoaring.net) or via BMFA web site links

### **7.21.2.2 Contest Entry**

Entry to any league event is open to All BMFA, SAA, RAFMAA and RNMAA members  
Models will be allowed to compete in two classes, 'Open' class, (up to 4000mm wingspan), 'Two Metre' class where the wingspan will not exceed 2000mm. In league competitions Open and 2M class models will always be run together in the same slots.

The competitor will elect to fly either 'Open' or '2 Meter' before the start of the competition. Dual entry is not allowed.

A minimum of 8 competitors, in total, must start. 4 must be Open class.

#### **7.21.2.3 Definition of a League Event Qualifying for a Final League result**

- (a) A minimum of 4 rounds will be completed.
- (b) A minimum of 8 competitors will start.
- (c) The contest will be flown to current BMFA UK F5J rules and Variations.
- (d) At no time should the number of pilots starting in a single slot be less than 4.
- (e) In the event (d) occurs, a group of flyers can be completed by adding other competitor(s) selected by random draw. For the person(s) selected, the better of the two normalised scores from the original flight and second flight will be their official score. That normalised score will be returned to the original slot.

#### **7.21.2.4 Number of League Events Counting for Final League Score**

- (a) The average of all individual competitors results from every qualifying competition entered will be used to define the league table.
- (b) A total of 4 qualifying competitions must be entered to ensure a place in the league.
- (c) Once a competitor has recorded results in 5 or more events, the lowest single score from all events will be discarded before that competitor's average score is calculated.
- (d) Once a competitor has recorded results in 7 or more events, the lowest two scores from all events will be discarded before that competitor's average score is calculated.
- (e) The above formula for dropped rounds will continue as follows:  
9 events drop 3 lowest scores,  
11 events drop 4, etc.

#### **7.21.2.5 League Scoring**

- (a) Only completed rounds will be scored. (Fly-Off scores are NOT counted)
- (b) The winning competitor will be given 100 points. Other competitors will be given a score based on their own score expressed as a percentage of the winner's score:  
$$\text{Competitor's score} = \frac{\text{Competitor's event score}}{\text{Event winner's score}} \times \frac{100}{1}$$
- (c) Note that in the event of a tie the discarded score will serve to give a position on the day. The tied competitors receive the same League score.
- (d) Three models may be used in any one event.

## **7.22.1 eSoaring (Height Limited Rules) Class.**

### **7.22.1.1 Objective**

To provide an electric powered model aircraft thermal soaring event, where the initial launch height is the same for all models and a single electric motor run is used to achieve the set launch height.

The launch must be followed by pure gliding flight with no further motor assistance.

Models will be allowed to compete in two classes, an 'Open' class, (up to 4000 mm wingspan), using the model definition in 7.12.2 (a) below and a 'Two Metre' class where the wingspan will not exceed 2000 mm. No other restrictions, other than those of 7.12.2 (a) below, will apply. In league competitions Open and 2M class models will always be run together in the same slots. The British and Scottish Nationals, may have events in each class.

The competitor will elect to fly either 'Open' or '2 Meter' before the start of the competition. Dual entry is not allowed.

### **7.22.1.2 General Rules**

#### **(a) Definition of Electric Powered Model Glider.**

A model aircraft in which lift is generated by aerodynamic forces acting on surfaces remaining fixed in flight, except control surfaces, which performs manoeuvres controlled by the pilot on the ground, using radio control.

Model aircraft with variable geometry or area must comply with the specification when the surfaces are in maximum and minimum extended mode.

#### **(b) General Characteristics of RC Electric Powered Model Aircraft (FAI F5 class)**

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Maximum surface area .....    | 150dm <sup>2</sup> (2325in <sup>2</sup> ) |
| Maximum flying weight .....   | 5Kg (11.023lbs)                           |
| Maximum surface loading ..... | 75g/dm <sup>2</sup> (24.51oz/sqft)        |
| Minimum surface loading ..... | 12g/dm <sup>2</sup> (3.95oz/sqft)         |

(c) The power source will consist of any kind of rechargeable batteries (or secondary cells). Mechanical or chemical modification of the individual cells, e.g. to reduce their weight, is not allowed, except that insulation sleeves of individual cells may be changed.

(d) Batteries may be charged or changed at any time during the competition.

(e1) Any device for the transmission of information from the model aircraft to the pilot, either directly or indirectly, is prohibited. This includes any visual, electronic or any other sort of signal from the model. Any use of telecommunication devices (including transceivers and telephones) in the field to communicate with competitors, their helpers or team managers while doing the competition task is not allowed. The only exception to this rule is the use of devices that cannot in any way be used to enhance the pilots chances in the contest.

(e2) Any device in addition to the approved height limiter and/or motor run timer, which is carried in or on the model and which enables total or partial independent control over the model is prohibited.

(f) Any ballast used must be carried internally and fastened securely within the airframe.

(g) Any type of electric motor may be used.

- (h) The competitor may use a maximum of three model aircraft in the contest. The competitor may combine the parts of the model aircraft during the contest, provided that the resulting model aircraft conforms to the rules and that where applicable, the parts have been checked for conformity before the contest.

### **7.22.1. 3 The Flying Site**

- (a) The competition should be held on a site having reasonably level terrain, which will minimise the possibility of slope and wave soaring.
- (b) The launching line will be arranged crosswind and shall include launch marks on the launch line at least 10 meters, preferably 15 metres apart, one for each competitor of a group.
- (c) The launch marks will also act as the centre of the landing circles; at which point a 10 meter graduated landing tape is fixed to the ground. The launch/landing markers should be laid out with reference to the wind direction, strength and site topography.
- (d) Competitors & timekeepers must remain upwind of their respective landing circle centres at all times after launching of models.

#### **Competitor and Helper**

- (j) Each competitor must operate the radio equipment personally.  
Each competitor is permitted a maximum of 1 helper and 1 timekeeper. The helper may act as timekeeper where permitted and may also launch the competitors model.

### **7.22.1.4 Contest Rules**

- (a) Specific model characteristics – eSoaring.

Open class models must not exceed 4,000 mm projected wingspan. 2 Metre class models must not exceed 2,000 mm projected wingspan.

No fixed or retractable arresting device (i.e. bolt, saw tooth-like protuberance, etc.) is allowed to slow down the model aircraft on the ground during landing. Vertical tail fins and/or rudders are excluded from this requirement so long as they are not expressly designed to arrest the movement of the model on landing.

The model must be fitted with an approved\* type of height limiter switch. Wherever the height limiting switch is positioned in the model, it must not be located where there is any likelihood of a greater air pressure reading being generated than exists outside the model at any time. (e.g. - close to any forward facing air scoop).

\* See appendix for definition of approved height limiter switches

The height limiter must not be enclosed in any material, or in any position or any part of the model, which could result in distortion of actual air pressure variations.

Models must include sufficient static venting to ensure that outside pressure is duplicated inside the model at the limit switch location.

It is the competitor's responsibility to ensure that the altimeter switch fitted to their model is correctly installed and operates in full accordance with the rules. (Note: This may include setting the altimeter switch to less than the set height, to ensure that launch height rules are complied with in full.)

- (b) Model processing - initial

Before the start of the contest the CD (Contest Director), or his representative must be satisfied that all models being flown are fitted with an approved height limiting switch. The switch must be set to cut all power to the electric drive motor so that the model aircraft completes its launch phase at an indicated pressure

altitude above launch level of 200 meters, or after 30 seconds of motor run time (40 seconds in the case of 2M models), whichever occurs first.

The 200 meters set launch height may be reduced at the discretion of the CD for any reason, before or between rounds at any contest.

To facilitate processing and enable subsequent flight line processing all limiting switches must be easily removable and/or easily accessible for checking. They must also be equipped with a multi digit numerical display, or alternatively with a plug into which an external multi digit numerical display unit can be connected, without the need to disconnect the unit from the receiver and/or the E.S.C. (Electronic Speed Controller), or remove it from the model.

(c) Model certification

Where a model has been previously subject to the above checks, and no changes have been made that could affect the launch height, the CD may choose to allow that model to fly in the contest without further checking.

(d) Model processing – subsequent

The CD may at any time before, during or immediately after the contest, ask for any competitors limiter settings to be checked for any non-compliance with the rules or to resolve any dispute, either by direct in flight comparison with a master altimeter or with the use of approved altimeter checking equipment.

At any time during the contest, at least three pilots, selected by the CD, will have their launch heights checked using an appropriate height reader. The launch altitude for compliance purposes shall be the maximum altitude recorded from the moment the model leaves the launchers hand until 10 seconds after the motor is stopped. (As used for FAI F5J competitions.) The altitude in metres shall be rounded down to the nearest meter.

It is the competitor's responsibility to ensure that an appropriate height reading device is available for checking purposes.

Any checked flights with launch heights in excess of the set launch height + 10% tolerance, will score zero points.

Master altimeters or check meters will be calibrated in accordance with International Standard Atmosphere (ISA). The ISA to be used for FAI matters is given in ICAO Document 7488 tables 3 and 4. It assumes a temperature and pressure at sea level of 15C and 760 mm of mercury (or 1013.25 mb/hPa). Above sea level, it assumes a constant temperature lapse rate from sea level of 6.5C per 1000 m (1.98C/3.56F per 1000 ft) rise in height, up to an altitude of 11,000 m (-56.5C).

(e) Entry, organisation of flying slots and timekeeping responsibilities

If NOT using approved radio equipment operating on the 2.4GHz frequency band competitors must enter two different transmitter frequencies with 10 kHz minimum spacing. The competitor can be called to use either of these frequencies during the contest, as long as the call is made at least 1/2 hour prior to the beginning of a round.

Pre-entry is advisable to enable the CD to arrange radio frequencies in advance so as to permit as many simultaneous flights as possible.

Any number of rounds may be scheduled but a minimum of 3 rounds must be completed to validate the contest and for the scores to count in the UK league. Unless otherwise specified in a league proposal for a given year, a minimum of four competitors are required to start in Open class to validate the contest as a

league event. There is no minimum entry requirement for 2M class models. (Note 7.22.2.3 (b) A minimum of 8 competitors will start.)

The flying order will be organised (i.e. by matrix) such that, as far as possible during the competition, each competitor will fly against as many other competitors as possible and not against the same competitor(s) in every slot. The only exception to this rule being in single slot per round contests.

The competitor is entitled to 5 minutes preparation time. Preparation time for the next slot in each round will start as soon as all the models from the previous slot have landed. The CD may announce an alternative (longer or shorter) preparation start time where appropriate.

It is the competitor's responsibility to provide a helper / timekeeper, with the possible exception of International Competitions, where timekeepers may be allocated by the organisers.

It is the competitor's responsibility to ensure that their timekeeper correctly times the flight and delivers the score to the CD or his representative

The CD must clearly indicate the start and end of the working time audibly and if possible visually.

Scratching from a contest with entry cancellation is not permitted for any reason after the 1<sup>st</sup> round has been completed.

#### **7.22.1.5 Contest Rules**

The working time for the contest is 11 minutes.

All models must be launched and landed within this time period.

One re-launch is allowed at any time during the 11 minute working time, a re-launch negates the first flight.

Models may be launched at any time during the 11 minute working time.

The target flight time is 10 minutes, terminating in a spot landing.

In the event that a flight exceeds 10.00 minutes, the excess time in seconds will be subtracted from the flight time score.

Any landing bonus is unaffected provided the landing is completed within the 11 minutes working time and also within 10 minutes and 30 seconds (a total of 630 seconds) of the start of flight time.

If the model lands either after the end of working time or after 10 minutes 30 seconds of flight time, a zero score will be allocated.

The motor in Open Class models must not be run after the first 30 seconds of flight time (40 seconds for 2M Class models). Following a motor cut by the height limiter, the pilot must then manually move the motor control to an off position within the next ten seconds, that positively ensures no possibility of the motor re-starting.

The 10 minute target time INCLUDES the launch time and starts from the point at which the model leaves the launchers hand under the pull of the electric motor.

The timekeeper, when requested, should assist the pilot by announcing the motor run time during the launch phase, advising elapsed time during flight and the approaching end of the 10 minute target time and/or the 11 minute working time.

The timekeeper must stop the watch when the model first touches the any object in contact with the ground, any pilot, helper or timekeeper or spectator.

#### **7.22.1.6 Contest Flights - Launching**

There is an official attempt when the model aircraft has left the hands of the competitor or those of a helper under the pull of the electric drive motor. CD may vary this rule for safety reason. (i.e. pusher propped models)

Power must not be applied to the altimeter switch until the model is on the flight line at ground level and within 1 meter of the launch/landing marker. At this time, the competitor must ensure that the motor control and/or switch is set to zero. (i.e. the full stop position of the motor), before arming the altimeter switch.

All models must be launched into wind and within four meters of the competitors launch / landing marker. This rule applies for the initial launch and any subsequent re-launch.

The motor run during the climb must be continuous.

#### **7.22.1.7 Landing**

Each competitor must have his own landing target.

The targets will be laid out with reference to the wind and site topography.

All landings should be made into wind towards the landing marker in the same general direction as launch. In still or variable light air conditions the launch / landing direction will be established by the CD.

After landing models may be retrieved only if doing so does not impede other competitors.

#### **7.22.1.8 Re-flights**

The competitor is entitled to a new working time only if the attempt was hindered or aborted by an unexpected event, not within the competitor's control.

Equipment or model failure does not qualify as grounds for a re-flight.

To claim a re-flight, considering the above-mentioned conditions, the competitor has to make sure that his official timekeeper has noticed the hindering conditions and he must land his model as soon as possible after this event.

Note that in a case where the competitor continues to launch or continues to fly after hindering conditions affected his flight, or does launch after clearing of the hindering condition(s), he is deemed to have waived his right to a new working time.

The new working time is to be granted to the competitor according to the following order of priorities:

- (1) In an incomplete group in a different (later) round, or in a complete group on additional launching/landing spots.
- (2) In a new group of several (minimum 4) re-flyers. The new group of re-flyers can be completed by other competitors selected by random draw. If the frequency of the drawn competitor does not fit or the competitor cannot fly, the draw is repeated.
- (3) In the original group at the end of the ongoing round.

In priority 2 and 3 above, the flyer granted the re-flight shall have the score achieved returned to the original slot/round.

In priority 2 and 3 above, any person involved in the re-fly, other than the flyer granted the re-flight, will receive the better of their 2 scores.

#### **7.22.1.9 Scoring**

All flight times are to rounded DOWN to the nearest second.

One point per full second of flight time, to a maximum possible total of 600 points (10:00 minutes).

One point will be deducted for every second flown in excess of 600 seconds (10:00 minutes).

A zero score will be recorded for a flight where the motor run is more than 30 seconds (40 seconds in the case of 2M models).

A zero score will be recorded if the motor is re-started by the competitor at any time during the flight. Momentary 'motor on' glitches, not instigated by the pilot, do not constitute a motor run or a reason for recording a zero score.

If the model aircraft loses any part either during the launch or in flight that flight will incur a 100 point penalty. The loss of any part in collision with another model aircraft or during landing, (i.e. in contact with the ground), is not taken into account.

Landing bonus will be awarded provided the model comes to rest within the arc of the landing tape. The measurement shall be taken from the nose of the model. No landing bonus is awarded if the model touches the competitor, his helper and/or timekeeper during landing.

Landing points will be awarded as below:

|                |   |        |
|----------------|---|--------|
| 0+to 1m        | = | 50pts  |
| 1+ to 2m       | = | 45pts  |
| 2+ to 3m       | = | 40pts  |
| 3+ to 4m       | = | 35pts  |
| 4+to 5m        | = | 30pts  |
| 5+ to 6m       | = | 25 pts |
| 6+ to 7m       | = | 20pts  |
| 7+ to 8m       | = | 15pts  |
| 8+to 9m        | = | 10pts  |
| 9+ to 10m      | = | 5 pts  |
| Over 10 meters | = | 0pts   |

A landing more than 75 meters from the target receives zero flight score. This distance rule may be varied by the CD dependant on the local topography and / or the confines of the flying site.

For each slot, the competitor with the highest score (flight + landing bonus) will receive 1000 points. Competitors with lower scores will be awarded a proportion of the winner's score i.e. score x 1000/winner's score.

#### **7.22.1.10 Final Classification**

Where more than 3 rounds are flown the lowest score will be discarded.

In the event of a tie the discarded score will decide places on the day but both competitors will receive equal League scores.

In the event that this does not produce a winner then a one round fly-off will be held using these same rules.

### **7.22.2 UK eSoaring (Height Limited) League**

#### **7.22.2.1 Introduction**

Information on the Leagues, individual contest dates and results etc. can be obtained at [www.eSoaring.net](http://www.eSoaring.net) or via BMFA web site links

#### **7.22.2.2 Contest Entry**

Entry to any league event is open to all BMFA, SAA, RAFMAA and RNMAA members.

### **7.22.2.3 Definition of a League Event Qualifying for a Final League result**

- (a) A minimum of 4 rounds will be completed.
- (b) A minimum of 8 competitors will start.
- (c) The contest will be flown to current BMFA UK eSoaring rules.
- (d) At no time should the number of pilots starting in a single slot be less than 3.
- (e) In the event (d) occurs, a group of flyers can be completed by adding other competitor(s) selected by random draw. For the person(s) selected, the better of the two normalised scores from the original flight and second flight will be their official score. That normalised score will be returned to the original slot.

### **7.22.2.4 Number of League Events Counting for Final League Score**

- (a) The average of all individual competitors results from every qualifying competition entered will be used to define the league table.
- (b) A total of 4 qualifying events must be entered to ensure a place in the league.
- (c) Once a competitor has recorded results in 6 events, the lowest single score from all events will be discarded before that competitor's average score is calculated.
- (d) Once a competitor has recorded results in 8 events, the lowest two scores from all events will be discarded before that competitor's average score is calculated.
- (e) The above formula for dropped rounds will continue as follows:

|                |                       |
|----------------|-----------------------|
| 9 events       | drop 3 lowest scores, |
| 11 events      | drop 4,               |
| 13 events      | drop 5,               |
| 15 events drop | 6 etc.                |

### **7.22.2.5 League Scoring**

- (a) Only completed rounds will be scored.
- (b) The winning competitor will be given 100 points. Other competitors will be given a score based on their own score expressed as a percentage of the winner's score:

$$\text{Competitor's score} = \frac{\text{Competitor's event score}}{\text{Event winner's score}} \times 100$$

- (c) Note that in the event of a tie the discarded score will serve to give a position on the day. The tied competitors receive the same League score.
- (d) Three models may be used in any one event.

## **7.23.1 UK F5D TEAM SELECTION**

### **7.23.1.1**

- (a) Selection for a World or European Championship team will be made in the year preceding the event.
- (b) Team Selection will be based on an individual's cumulative scores from BMPRA sanctioned league events held during the qualification year.
- (c) The score for each event is calculated as per F5D league scoring. The best scores from the eligible events to count are added together to get a total team selection score. These scores are ranked and the top three competitors are offered a place on the team.
- (d) If any of those qualifying do not wish to be a team member, the place or places will be offered to other competitors in order of the team selection score ranking, i.e. 4th place in is 1st reserve for the team.
- (e) The number of events to count for team selection is as follows:
  - 4 events from 7 or more eligible events to count
  - 4 events from 6 eligible events to count
  - 3 events from 5 eligible events to count
  - 3 events from 4 eligible events to count
  - 3 or less events flown, all rounds to count
- (f) Selected team members may nominate one "Caller" to be included as part of the Championships team. The "Caller" is an official member of the team and therefore must also hold a valid FAI Sporting License for the year of the Championship event and should to commit to attending the relevant Championships as a team member.
- (g) The selected team is submitted to the RCPTC by the appropriate Specialist Body, currently the BMPRA.

## **7.23.2 UK F5D LEAGUE SCORING**

### **7.23.2.1**

- (a) For each event the winning competitor will be given 100 points. The other competitors will be given a points based on their own score expressed as a ratio of the winner's score and the maximum possible score, calculated as follows:

$$\text{Competitor 's League Points} = \frac{\text{Maximum Score} - \text{Competitor 's Score}}{\text{Maximum Score} - \text{Event Winner' s Score}} \times 100.0\%$$

Where "Maximum Score" is the number of rounds flown, subtracting the number of discarded rounds (as per FAI rules), multiplied by 200.

- (b) Up to 5 events will count towards a competitor's overall league points.

## **Appendix (1) - Notes for Organisers of F3J & 100S Contests**

### **1.1 Slot Time Signals**

The organisers must ensure that each competitor has no doubt about the precise second that the slot time starts and finishes. Visual indication may be by raising of a flag or coloured board situated near the contest control. Audible indication may be by motor horn, aerosol horn or bell etc.. It should be remembered that sound does not travel far against the wind; care must therefore be taken with the positioning of the noise source.

### **1.2 The Matrices**

- (a) The method by which each competitor is given his/her competition number from the matrix is left to the organisers.
- (b) Once the contest has started, neither the matrix table or competition number must be changed.
- (c) Sets of matrix tables to cover the most popular sizes of contests are laid out in appendix (2).

### **1.3 Percentage Slot Scores by Use of Pocket Calculator**

Dividing 1000 by the top slot score gives a result that is entered into the memory as a constant, thus;

**Step 1** Switch on calculator and ensure that display and memory are clear.

**Step 2** Key 1000, Key 'divide by', Key Top Slot Score, Key =, Key M+

To obtain the percentage slot scores, each lower score is then multiplied by this constant thus;

**Step 3** Key Slot Score, Key 'multiply by', Key MR, Key =

The result, ignoring all figures after the decimal point, is the corrected score for that competitor in that slot.

**Step 4** As a final check, repeat step 3 using the top slot score (i.e. Top slot score times MR = ). The answer should be 1000.

### **1.4 Time-keepers Duties**

Organisers must make sure that all who are to act as time-keepers are fully aware of just how important their duties are and to make certain that they are conversant with the rules, particularly those that require quick positive action in order not to jeopardise a competitors chances in the competition.

If a transmitter control compound is in use, the time-keepers will be responsible for handing transmitters to competitors prior to the start of the slot time and for returning them to control at the end of the slot or flight, whichever is earlier.

The organisers must ensure that an official is nominated to note any competitor who over-flies the end of the slot time and to time the excess time

### **1.5 USE OF THE MATRIX**

Depending on the number of competitors in the contest and the frequencies available the organisers must sort the competitors into frequency groups as noted on the selected matrix. Note that at this stage some competitors may have to change their radio frequencies.

The organisers can then assign each entrant a competition number from the matrix for Round 1 of the contest, the competitor keeping this number for the remainder of the contest. For example, in a competition with 25 entrants using Matrix (a), a competitor may be grouped into frequency group (C) and then given competition number (13).

He then flies: Round 1 in Slot 3 - Round 2 in Slot 1 - Round 3 in Slot 4

## Appendix (2) - Matrix Tables

### 2.1 (a) 25 competitors flying five slots per round

| ROUND 1 FREQUENCY GROUP |    |    |    |    |    |
|-------------------------|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  |
| 1                       | 1  | 2  | 3  | 4  | 5  |
| 2                       | 6  | 7  | 8  | 9  | 10 |
| 3                       | 11 | 12 | 13 | 14 | 15 |
| 4                       | 16 | 17 | 18 | 19 | 20 |
| 5                       | 21 | 22 | 23 | 24 | 25 |

| ROUND 2 FREQUENCY GROUP |    |    |    |    |    |
|-------------------------|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  |
| 1                       | 1  | 7  | 13 | 19 | 25 |
| 2                       | 6  | 12 | 18 | 24 | 5  |
| 3                       | 11 | 17 | 23 | 4  | 10 |
| 4                       | 16 | 22 | 3  | 9  | 15 |
| 5                       | 21 | 2  | 8  | 14 | 20 |

| ROUND 3 FREQUENCY GROUP |    |    |    |    |    |
|-------------------------|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  |
| 1                       | 1  | 12 | 23 | 9  | 20 |
| 2                       | 6  | 17 | 3  | 14 | 25 |
| 3                       | 11 | 22 | 8  | 19 | 5  |
| 4                       | 16 | 2  | 13 | 24 | 10 |
| 5                       | 21 | 7  | 18 | 4  | 15 |

### (b) 36 Competitors Flying 6 Slots per Round

| ROUND 1 FREQUENCY GROUP |    |    |    |    |    |    |
|-------------------------|----|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  | F  |
| 1                       | 1  | 2  | 3  | 4  | 5  | 6  |
| 2                       | 7  | 8  | 9  | 10 | 11 | 12 |
| 3                       | 13 | 14 | 15 | 16 | 17 | 18 |
| 4                       | 19 | 20 | 21 | 22 | 23 | 24 |
| 5                       | 25 | 26 | 27 | 28 | 29 | 30 |
| 6                       | 31 | 32 | 33 | 34 | 35 | 36 |

| ROUND 2 FREQUENCY GROUP |    |    |    |    |    |    |
|-------------------------|----|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  | F  |
| 1                       | 1  | 8  | 15 | 22 | 29 | 36 |
| 2                       | 7  | 14 | 21 | 28 | 35 | 6  |
| 3                       | 13 | 20 | 27 | 34 | 5  | 12 |
| 4                       | 19 | 26 | 33 | 4  | 11 | 18 |
| 5                       | 25 | 32 | 3  | 10 | 17 | 24 |
| 6                       | 31 | 2  | 9  | 16 | 23 | 30 |

| ROUND 3 FREQUENCY GROUP |    |    |    |    |    |    |
|-------------------------|----|----|----|----|----|----|
| SLOT                    | A  | B  | C  | D  | E  | F  |
| 1                       | 1  | 32 | 27 | 22 | 17 | 12 |
| 2                       | 7  | 2  | 33 | 28 | 23 | 18 |
| 3                       | 13 | 8  | 3  | 34 | 29 | 24 |
| 4                       | 19 | 14 | 9  | 4  | 35 | 30 |
| 5                       | 25 | 20 | 15 | 10 | 5  | 36 |
| 6                       | 31 | 26 | 21 | 16 | 11 | 6  |

**(c) 49 Competitors Flying 7 Slots per Round**

| ROUND 1 |    | FREQUENCY GROUP |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  |
| 1       | 1  | 2               | 3  | 4  | 5  | 6  | 7  |
| 2       | 8  | 9               | 10 | 11 | 12 | 13 | 14 |
| 3       | 15 | 16              | 17 | 18 | 19 | 20 | 21 |
| 4       | 22 | 23              | 24 | 25 | 26 | 27 | 28 |
| 5       | 29 | 30              | 31 | 32 | 33 | 34 | 35 |
| 6       | 36 | 37              | 38 | 39 | 40 | 41 | 42 |
| 7       | 43 | 44              | 45 | 46 | 47 | 48 | 49 |

| ROUND 2 |    | FREQUENCY GROUP |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  |
| 1       | 1  | 9               | 17 | 25 | 33 | 41 | 49 |
| 2       | 8  | 16              | 24 | 32 | 40 | 48 | 7  |
| 3       | 15 | 23              | 31 | 39 | 47 | 6  | 14 |
| 4       | 22 | 30              | 38 | 46 | 5  | 13 | 21 |
| 5       | 29 | 37              | 45 | 4  | 12 | 20 | 28 |
| 6       | 36 | 44              | 3  | 11 | 19 | 27 | 35 |
| 7       | 43 | 2               | 10 | 18 | 26 | 34 | 42 |

| ROUND 3 |    | FREQUENCY GROUP |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  |
| 1       | 1  | 44              | 38 | 32 | 26 | 20 | 14 |
| 2       | 8  | 2               | 31 | 39 | 33 | 27 | 21 |
| 3       | 15 | 9               | 24 | 46 | 40 | 34 | 28 |
| 4       | 22 | 16              | 17 | 4  | 47 | 41 | 35 |
| 5       | 29 | 23              | 10 | 11 | 5  | 48 | 42 |
| 6       | 36 | 30              | 3  | 18 | 12 | 6  | 49 |
| 7       | 43 | 37              | 45 | 25 | 19 | 13 | 7  |

**(d) 64 Competitors Flying 8 Slots per Round**

| ROUND 1 |    | FREQUENCY GROUP |    |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  | H  |
| 1       | 1  | 2               | 3  | 4  | 5  | 6  | 7  | 8  |
| 2       | 9  | 10              | 11 | 12 | 13 | 14 | 15 | 16 |
| 3       | 17 | 18              | 19 | 20 | 21 | 22 | 23 | 24 |
| 4       | 25 | 26              | 27 | 28 | 29 | 30 | 31 | 32 |
| 5       | 33 | 34              | 35 | 36 | 37 | 38 | 39 | 40 |
| 6       | 41 | 42              | 43 | 44 | 45 | 46 | 47 | 48 |
| 7       | 49 | 50              | 51 | 52 | 53 | 54 | 55 | 56 |
| 8       | 57 | 58              | 59 | 60 | 61 | 62 | 63 | 64 |

| ROUND 2 |    | FREQUENCY GROUP |    |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  | H  |
| 1       | 1  | 10              | 19 | 28 | 37 | 46 | 55 | 64 |
| 2       | 9  | 18              | 27 | 36 | 45 | 54 | 63 | 8  |
| 3       | 17 | 26              | 36 | 44 | 53 | 62 | 7  | 16 |
| 4       | 25 | 34              | 43 | 52 | 61 | 6  | 15 | 24 |
| 5       | 33 | 42              | 51 | 60 | 5  | 14 | 23 | 32 |
| 6       | 41 | 50              | 59 | 4  | 13 | 22 | 31 | 40 |
| 7       | 49 | 58              | 3  | 12 | 21 | 30 | 39 | 48 |
| 8       | 57 | 2               | 11 | 20 | 29 | 38 | 47 | 56 |

| ROUND 3 |    | FREQUENCY GROUP |    |    |    |    |    |    |
|---------|----|-----------------|----|----|----|----|----|----|
| SLOT    | A  | B               | C  | D  | E  | F  | G  | H  |
| 1       | 1  | 58              | 51 | 44 | 37 | 30 | 23 | 16 |
| 2       | 9  | 2               | 59 | 52 | 45 | 38 | 31 | 24 |
| 3       | 17 | 10              | 3  | 60 | 53 | 46 | 39 | 32 |
| 4       | 25 | 18              | 11 | 4  | 61 | 54 | 47 | 40 |
| 5       | 33 | 26              | 19 | 12 | 5  | 62 | 55 | 48 |
| 6       | 41 | 34              | 27 | 20 | 13 | 6  | 63 | 56 |
| 7       | 49 | 42              | 35 | 28 | 21 | 14 | 7  | 64 |
| 8       | 57 | 50              | 43 | 36 | 29 | 22 | 15 | 8  |

**(e) 81 Competitors Flying 9 Slots per Round**

| <b>ROUND 1 FREQUENCY GROUP</b> |    |    |    |    |    |    |    |    |    |
|--------------------------------|----|----|----|----|----|----|----|----|----|
| SLOT                           | A  | B  | C  | D  | E  | F  | G  | H  | I  |
| 1                              | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 2                              | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 3                              | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 4                              | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
| 5                              | 37 | 38 | 38 | 40 | 41 | 42 | 43 | 44 | 45 |
| 6                              | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |
| 7                              | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |
| 8                              | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 |
| 9                              | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 |

| <b>ROUND 2 FREQUENCY GROUP</b> |    |    |    |    |    |    |    |    |    |
|--------------------------------|----|----|----|----|----|----|----|----|----|
| SLOT                           | A  | B  | C  | D  | E  | F  | G  | H  | I  |
| 1                              | 1  | 11 | 21 | 31 | 41 | 51 | 61 | 71 | 81 |
| 2                              | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 9  |
| 3                              | 19 | 29 | 39 | 49 | 59 | 69 | 79 | 8  | 18 |
| 4                              | 28 | 38 | 48 | 58 | 68 | 78 | 7  | 17 | 27 |
| 5                              | 37 | 47 | 57 | 67 | 77 | 6  | 16 | 26 | 36 |
| 6                              | 46 | 56 | 66 | 76 | 5  | 15 | 25 | 35 | 45 |
| 7                              | 55 | 65 | 75 | 4  | 14 | 24 | 34 | 44 | 54 |
| 8                              | 64 | 74 | 3  | 13 | 23 | 33 | 43 | 53 | 63 |
| 9                              | 73 | 2  | 12 | 22 | 32 | 42 | 52 | 62 | 72 |

| <b>ROUND 3 FREQUENCY GROUP</b> |    |    |    |    |    |    |    |    |    |
|--------------------------------|----|----|----|----|----|----|----|----|----|
| SLOT                           | A  | B  | C  | D  | E  | F  | G  | H  | I  |
| 1                              | 1  | 74 | 66 | 58 | 50 | 42 | 34 | 26 | 18 |
| 2                              | 10 | 2  | 75 | 67 | 59 | 51 | 43 | 35 | 27 |
| 3                              | 19 | 11 | 3  | 76 | 68 | 60 | 52 | 44 | 36 |
| 4                              | 28 | 20 | 12 | 4  | 77 | 69 | 61 | 53 | 45 |
| 5                              | 37 | 29 | 21 | 13 | 5  | 76 | 70 | 62 | 54 |
| 6                              | 46 | 38 | 30 | 22 | 14 | 6  | 79 | 71 | 63 |
| 7                              | 55 | 47 | 39 | 31 | 23 | 15 | 7  | 80 | 72 |
| 8                              | 64 | 56 | 48 | 40 | 32 | 24 | 16 | 8  | 81 |
| 9                              | 73 | 65 | 57 | 49 | 41 | 33 | 25 | 17 | 9  |

**(f) 100 Competitors Flying 10 Slots per Round**

| ROUND 1 |    |    |    |    | FREQUENCY GROUP |    |    |    |    |     |
|---------|----|----|----|----|-----------------|----|----|----|----|-----|
| SLOT    | A  | B  | C  | D  | E               | F  | G  | H  | I  | J   |
| 1       | 1  | 2  | 3  | 4  | 5               | 6  | 7  | 8  | 9  | 10  |
| 2       | 11 | 12 | 13 | 14 | 15              | 16 | 17 | 18 | 19 | 20  |
| 3       | 21 | 22 | 23 | 24 | 25              | 26 | 27 | 28 | 29 | 30  |
| 4       | 31 | 32 | 33 | 34 | 35              | 36 | 37 | 38 | 39 | 40  |
| 5       | 41 | 42 | 43 | 44 | 45              | 46 | 47 | 48 | 49 | 50  |
| 6       | 51 | 52 | 53 | 54 | 55              | 56 | 57 | 58 | 59 | 60  |
| 7       | 61 | 62 | 63 | 64 | 65              | 66 | 67 | 68 | 69 | 70  |
| 8       | 71 | 72 | 73 | 74 | 75              | 76 | 77 | 78 | 79 | 80  |
| 9       | 81 | 82 | 83 | 84 | 85              | 86 | 87 | 88 | 89 | 90  |
| 10      | 91 | 92 | 93 | 94 | 95              | 96 | 97 | 98 | 99 | 100 |

| ROUND 2 |    |    |    |    | FREQUENCY GROUP |    |    |    |    |     |
|---------|----|----|----|----|-----------------|----|----|----|----|-----|
| SLOT    | A  | B  | C  | D  | E               | F  | G  | H  | I  | J   |
| 1       | 1  | 12 | 23 | 34 | 45              | 56 | 67 | 78 | 89 | 100 |
| 2       | 11 | 22 | 33 | 44 | 55              | 66 | 77 | 88 | 99 | 10  |
| 3       | 21 | 32 | 43 | 54 | 65              | 76 | 87 | 98 | 9  | 20  |
| 4       | 31 | 42 | 53 | 64 | 75              | 86 | 97 | 8  | 19 | 30  |
| 5       | 41 | 52 | 63 | 74 | 85              | 96 | 7  | 18 | 29 | 40  |
| 6       | 51 | 62 | 73 | 84 | 95              | 6  | 17 | 28 | 39 | 50  |
| 7       | 61 | 72 | 83 | 94 | 5               | 16 | 27 | 38 | 49 | 60  |
| 8       | 71 | 82 | 93 | 4  | 15              | 26 | 37 | 48 | 59 | 70  |
| 9       | 81 | 92 | 3  | 14 | 25              | 36 | 47 | 58 | 69 | 80  |
| 10      | 91 | 2  | 13 | 24 | 35              | 46 | 57 | 68 | 79 | 90  |

| ROUND 3 |    |    |    |    | FREQUENCY GROUP |    |    |    |    |     |
|---------|----|----|----|----|-----------------|----|----|----|----|-----|
| SLOT    | A  | B  | C  | D  | E               | F  | G  | H  | I  | J   |
| 1       | 1  | 92 | 83 | 74 | 65              | 56 | 47 | 38 | 29 | 20  |
| 2       | 11 | 2  | 93 | 84 | 75              | 66 | 57 | 48 | 39 | 30  |
| 3       | 21 | 12 | 3  | 94 | 85              | 76 | 67 | 58 | 49 | 40  |
| 4       | 31 | 22 | 13 | 4  | 95              | 86 | 77 | 68 | 59 | 50  |
| 5       | 42 | 32 | 23 | 14 | 5               | 96 | 87 | 78 | 69 | 60  |
| 6       | 51 | 42 | 33 | 24 | 15              | 6  | 97 | 88 | 79 | 70  |
| 7       | 61 | 52 | 43 | 34 | 25              | 16 | 7  | 98 | 89 | 80  |
| 8       | 71 | 62 | 53 | 44 | 35              | 26 | 17 | 8  | 99 | 90  |
| 9       | 81 | 72 | 63 | 54 | 45              | 36 | 27 | 18 | 9  | 100 |
| 10      | 91 | 82 | 73 | 64 | 55              | 46 | 37 | 28 | 19 | 10  |

## Appendix (3) - Approved Height Limiter Switches

- 3.1** In order to gain approval, any height limiting switch must demonstrate that it will consistently enable an electric glider, when operated within the rules of the competition, to finish its launch phase at an ISA 15C pressure indicated altitude of 200 metres (or at a lower height as might be defined at the discretion of the CD during a competition) or after 30 seconds (40 seconds for 2M Class models) of motor run time, whichever occurs first. This requirement must be met whether or not the unit incorporates an 'anti-zooming' feature.

### **3.2** Manufacturer RC Electronics

RC Altimeter #2 BASIC with firmware version 2.17 (or later approved versions)

RC Altimeter #2 PRO with firmware version 2.17 (or later approved versions).

RC Multi 2 with firmware version 1.13, (or later approved versions).

All on RC Electronics devices must use the RC FXJ Programming Card with firmware version 1.6 (or later approved versions) in order to read launch height.

### **3.3** Manufacturer – Aerobtec

Altis Micro with firmware V1.0

Altis v3 with firmware version 2.3, (or later approved versions).

The Aerobtec Altis v3 device must use the Aerobtec Programming Card with firmware version 2.1 (or later approved versions) in order to read launch height.

Altis v4 with firmware version 1.5 (or later approved versions). The Altis v4 uses an inbuilt display to show current device settings and launch height. During competition, the user must have appropriate facilities available to make any launch height adjustments as may be required at the discretion of the CD.

### **3.4** Manufacturer – Winged Shadow

Sky Limit with firmware version 1.4, (or later approved versions).

The Winged Shadow device must use the Sky Limit Programmer in order to read launch height.

NOTE: All switched/height readers must be configured to display F5J style height readout. i.e. the maximum height reached by the model between launch and 10 seconds after the motor is cut either by the run timer or manually.

Alternative devices are known to be in development and, once they are commercially available and have gained approval, they too will be listed for use in these events.

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